

American Aviation

The Independent Voice of American Aeronautics SEPTEMBER 15, 1945

Spokesman For Air Power

IN SPEECHES and in his book, "Air Power For Peace," and in his capacity as president of the Aircraft Industries Association of America, Eugene E. Wilson, vice chairman of United Aircraft Corporation, has become a valued and articulate industrial spokesman for commercial and military air power.

Now as never before the absolute and vital need of aeronautical research development must be brought home to the people of the United States. Mr. Wilson has become an able voice in this critical period in

American aircraft manufacturing. His vision is broad and his temperate and considerate views are not obscured by narrow or selfish motives nor are they intermingled with factional or extremist aviation "causes." They reflect stature. And because of this the industry, and in fact the entire aviation enterprise, may well be glad to have him as a spokesman.

No one who has followed closely the aeronautical developments of the years leading up to the war when we were caught so woefully unprepared, or who has seen intimately the tremendous production job fulfilled by the manufacturing industry, can have the slightest doubt that Mr. Wilson is correct when he hammers home his primary thesis that research and development are the keys to both military and economic security.

It is difficult to interest people in abstract ideas. Research and development are abstract. But Mr. Wilson is doing a good job of "selling" abstract ideas and he needs the support of all who are concerned with aeronautical advancement.

"The experimental weapons of the closing days of one war forecast the decisive weapons of the opening of the next," he said in a recent speech in Los Angeles. "The advent of self-propelled and guided missiles (and, we might add, the atomic bomb), now forecasts less emphasis on the airplane as a weapon. At the same time the enormous expansion in air transport reveals the expanding importance of the airplane as a vehicle."

Those are historic words from a leader in the industry. Back of them are much meaning, and we would again point out with perhaps more emphasis than Mr. Wilson has done, that commercial aviation is likely to dominate our aviation enterprise in the United States in a way which was never possible in the pre-war years.

It was the military—Billy Mitchell, Hap Arnold,
(Turn to page 6)



Vice President of P-V Engineering

Harry S. Pack, airline engineering executive, has been elected vice president and director of P-V Engineering, Inc., Sharon Hill, Pa. P-V is the pioneer builder of the PV-3 Transport Helicopter.

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Delivery Service Deluxe

The further development of the helicopter, postwar, can make the phrase "Delivery Service Deluxe" a practicable reality. For with *helicopter delivery service*—residential areas and localities which now lie far beyond the limits of most existing retail delivery zones—can be served as speedily as locations only a few miles from downtown stores.

With carrying capacity comparable to a medium motor truck, with specialized ability to fly slowly as well as swiftly, to ascend and descend vertically, the helicopter is well suited to the needs of suburban package delivery service—when operated by professional pilots.

Department stores, specialty shops, markets, and other types of retail establishments which maintain substantial home delivery services—may

greatly enlarge their normal trading zones with helicopter delivery service—with a consequent increase in customers and sales. For the helicopter may be used for transfer or direct delivery service to areas adjacent to customers' homes.

At McDonnell, *right now*, our main job is making aircraft and parts for war . . . and that's the most important delivery job of all. But it isn't too soon, even now, to discuss postwar plans for specialized helicopter service.

We shall welcome the opportunity to sit down with you or your representatives—and work out specifications for the adaptation of a helicopter to your particular commercial needs . . . a type of helicopter which can be utilized for almost any kind of utilitarian service . . . almost anywhere in the world.

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Fly Billion Miles

During a three year period recently ended, the United Air Lines has flown more than a billion passenger miles without a single fatal accident.

This is a remarkable record, worthy of special commendation. The National Safety Council has taken note of it by conferring upon the company the council's highest wartime award—a citation for Distinguished Service to Safety.

Such a record would be outstanding in peacetime. It is particularly noteworthy now because it shows continued development of operational technique has been more than adequate to overcome increased problems resulting from the war.

Editorial from the San Francisco
Call Bulletin, July 5, 1945

Billion Safe Miles

Something more than passing notice should be taken of the award by the National Safety Council of the Distinguished Service to Safety honor to the United Airlines for flying over a billion passenger miles since May, 1942, without a fatal accident.

Even in 1942 travel by air was still looked upon by thousands of persons as extra hazardous. The war experience did much to dissipate that attitude, both by example and the rapid increase in safety by aerodynamic science.

However, the public distinguishes between military and civilian flying and lines is the most promising augury for peacetime air transport that could be imagined.

Editorial from the San Francisco
News, June 29, 1945

Editorial from the San Francisco
Chronicle, July 2, 1945

Speed and Safety

There's a jog of memory in the National Safety Council citation of United Air Lines for a billion passenger miles operated in three years without a fatal accident.

It was in only the yesterdays of this generation that aviation was a stunt and a pilot a daredevil, with his cap turned fore and aft, and sitting on the edge of a flying crate, with his legs dangling over nothing.

But announcement of the award passes as just another item in the day's news. This is typical of the age of speed and miracles of which the plane is a symbol. We expect progress and safety.



United Air Lines is deeply appreciative of these editorials . . . and of those from many other newspapers across the country . . . for their recognition of United's achievement. We are also proud of our flight personnel and ground employees who made this record possible.

UNITED



AIR LINES

American Aviation

Volume 9, Number 8

The Independent Voice of American Aeronautics

September 15, 1945



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Other Publications and Services:

American Aviation Daily: The only daily news service for the aviation industry. Published daily except Sundays and holidays since 1932. Dispatched via airmail or surface mail for overnight delivery in the United States. Subscriptions: \$15 one month, \$170 one year. Airmail delivery to points outside the United States at additional cost to cover postage. Service Bureau available to all subscribers. CLIFFORD GUEST, Managing Editor.

International Aviation: A weekly newsletter of aviation trends and news in foreign countries. Published on Friday of each week and dispatched via first-class surface mail. Editorial representatives in foreign capitals. Subscriptions: \$100 one year (\$2 issues). Airmail delivery available at additional cost to cover postage. Service Bureau available to all subscribers. FRANK M. HOLZ, Managing Editor.

American Aviation Directory: Published twice a year, Spring and Fall. Complete reference data on administrative and operating personnel of airlines, aircraft and engine manufacturers, accessory and equipment manufacturers, organizations, schools, U. S. and foreign aviation groups and departments, etc. Completely cross-indexed by companies, activities, products and individuals. Single copy \$5.00; annual subscription (two successive editions) \$7.50. Spring-Summer 1945 issue now available. HELEN L. WALSH, Managing Editor.

American Aviation Traffic Guide: Monthly publication of airline schedules, rates and regulations for passenger and cargo transportation by commercial air transport. Supplements furnished subscribers covering changes occurring between issues. Subscriptions: U. S. and Latin America \$5.00 one year (12 issues and supplements); Canada \$5.50. All other countries \$6.50. Published and revised from editorial offices at 139 North Clark Street, Chicago 2, Illinois. (Telephone: State 2154). H. D. WHITNEY, Managing Editor.

American Aviation Reports: Current financial and traffic statistics on all domestic airlines as reported to the Civil Aeronautics Board. Includes monthly and semi-annual summaries. Yearly subscription comprises over 500 separate reports. \$175 one year; \$100 six months; \$20 one month. Special statistical and research work for subscribers at cost.

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(Continued from page 1)

Tooev Spaatz, Ira Eaker and others—who recognized the importance of the military airplane many years ago. Because of the painfully difficult time they had in justifying military expenditures in peacetime America, they used civil and commercial aviation as a lever by which to keep our aircraft factories open and our pilots in training. The early air mail, the early airport developments, the early research and the like, were all stimulated by the military. It is fortunate that we had men like Hap Arnold who kept prodding by one means or another to keep our aviation enterprise alive.

Civil and commercial aviation have come of age, and military aviation can take considerable credit for making their development and expansion possible. The impetus given to commercial aviation by the excellently-operated Air Transport Command is beyond measurement.

The greatest support our military aviation can have is through a strong commercial enterprise, widespread throughout the nation and the world. Probably Mr. Wilson is correct when he says that less emphasis will be given on the airplane as a weapon. Yet it is national suicide to trim aeronautical research and development. It must be continued. And it can best be continued if we expand our commercial aviation as rapidly and soundly as possible.

We believe men like Hap Arnold understand this. Certainly commercial aviation owes a debt to Hap Arnold and Harold George for the stimulant given to it during the war. Now that the war is over, commercial aviation can be a means of keeping alive the essentials of military aviation. We think in ten years it will exceed all expectations relative to the number of aircraft and personnel needed. Meanwhile Mr. Wilson deserves the highest commendation for the quality of his speeches and his writings, for a strong spokesman will certainly be required in the coming days of Congress. "Research and development are the keys to both military and economic security."

More on Foreign Policy

IN THE last issue we expressed the opinion that this country should have an Assistant Secretary of State for Air to provide rank and prestige commensurate with the importance of civil aviation in the future welfare of the nation and with the importance accorded to civil aviation in other leading countries.

As an additional thought along this line, it seems clear that what the United States has sorely lacked in its foreign policy generally is coordination. Other and older countries more experienced in the art and science of international trading and bargaining do not hesitate to use pressure levers. We have levers to use, also, especially in view of the preponderant role we have played in the war. But we have not learned the knack of combining these levers into over-all policy.

For example, we are currently bargaining for landing rights for our foreign air carriers. We are dealing strictly in terms of aviation. Other countries, notably

the British, are adept at combining all levers such as coal, oil, shipping, port facilities, foreign exchange, and numerous other items. In our bilateral talks our aviation officials have only one subject with which to deal—airline schedules. They should have much more to bargain with, whether it be lend-lease accounts, food, shipping, oil or whatnot. Our foreign air policy should be closely integrated with our over-all foreign policy. That is one clearcut reason why we need more rank in the Department of State.

We have capabilities in our aviation officials in the government. The Department of State is no exception. But government officials are handicapped unless they have appropriate rank and prestige. Important matters such as landing rights cannot be passed "down the line" in the Department without risking the loss of rights which we have every right to demand and obtain. We are nearing the crucial time in our foreign negotiations. Much is at stake. The prestige and strength of our entire Department of State is needed in the furtherance of our aims.

The Other Cheek

A FEW months ago the airlines were piqued when the president of the National Aviation Trades Association came forth with some opinions on the U. S. foreign air policy with specific reference to scheduled air transport. The airlines have voiced criticism from time to time of non-scheduled groups meddling in scheduled airline matters, and on the whole we have agreed that each group should stick to its own knitting.

But what holds true for non-scheduled also holds true for scheduled transport. Lo and behold on September 2 the Air Transport Association released to the press a ponderous six-page release about air education and private flying. The ATA went so far as to try to expert flight training and came to the wonderful conclusion that an average high school boy can learn to fly a small plane in three hours and that grandparents can solo in six and one-half hours. We think the ATA has enough to do without invading a publicity field obviously not its own. It should leave the experting of private flying to qualified groups such as NAA, AOPA, NATA and ATS. The ATA release in large measure nullified the airlines' criticism of other aviation groups for getting out of their respective fields. Tit for tat.

Bigger Weather Bureau Job

SECRETARY of Commerce Henry Wallace is preparing an extensive report upon which he will base a reshuffling of his entire department organization. The weather bureau is slated for considerable revamping, especially to increase its usefulness to aviation. Wallace feels that it has gone along in a routine manner for many years, and has not kept up with the air age.

WAYNE W. PARRISH



Phillips Hails a Famous Highway



It's The Silver Anniversary of the Main Line Airway—Flown by United Air Lines

TWENTY-FIVE years ago this month a new, immensely important U. S. highway came into being—the nation's first coast-to-coast air route, now the Main Line Airway of United Air Lines!

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On this route took place the first coast-to-coast air mail service, the first scheduled night flying, the first airline use of two-way ground-to-plane radio,

and United was the first airline to develop and use three-mile-a-minute twin-engined transports.

To a great Air Line, to a great Airway, and to the men who made it possible—our hats are off!

Is there any *other* reason for this birthday greeting? Sure! We're in the business of selling Aviation Gasoline. United Air Lines is a good customer of ours. We think the best tip-off on *any* product is the kind of people who buy it. We've earned United's approval and respect—we'd like a chance to earn *yours*. Write to us at—Aviation Department, Phillips Petroleum Company, Bartlesville, Oklahoma.

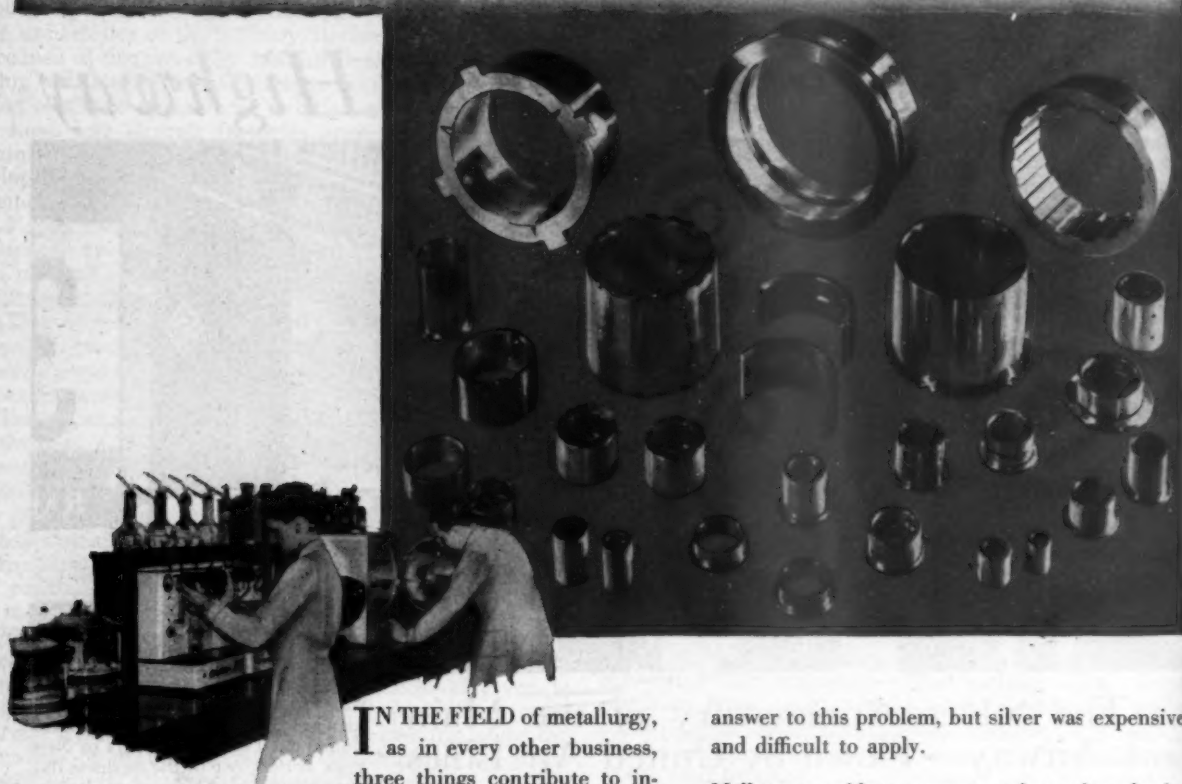
War Production flies the Main Line Airway! Shipments placed aboard United Air Lines Cargoliners in New York at the close of the business day reach Pacific Coast cities next morning.



William Allan Patterson, president, under whose guidance United Air Lines has grown to a 6,300-mile system servicing 53 cities in 17 states, the District of Columbia and one Canadian province.



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IN THE FIELD of metallurgy, as in every other business, three things contribute to industrial leadership: *engineering research, production skill, constant emphasis on precision and accuracy.* These are the reasons why Mallory metallurgical products have been famous for over a quarter of a century. They explain, too, why Mallory Bearings have found wide acceptance in the aircraft industry.

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Wings of Yesterday

Twenty-Five Years Ago

A Dayton Wright "K-T" "Cabin Cruiser" made a delivery of film from Famous Players-Lasky Corp. The film was flown from Dayton Wright Field to Cincinnati, Richmond, Indianapolis, Columbus and return. (Sept. 15, 1920).

The International Airplane Race at Venice, Italy, for the Schneider Cup, was won by Naval Lt. Chevalier Luigi Balogna. He piloted a Savoia 12, Ansaldo motored, 375½ kilometers in 2 hours, 35 minutes, at 152½ mph. (Sept. 18-19, 1920).

Eleven million marks were subscribed for the establishment of Air Post, at Bremen, Germany. (Sept. 22, 1920).

A national balloon race was held at Birmingham, Ala., under the auspices of the Aero Club of America and F. A. I. (Sept. 25, 1920).

The American Legion, in National Convention in Cleveland, Ohio, adopted a resolution urging Congress to enact laws regulating aerial transport and re-affirming a resolution of 1919 calling for separate departments of aeronautics. (Sept. 27, 1920).

The Gordon Bennett Cup Race was held at Etampes, near Paris, under the auspices of the Aero Club of France. Sadi Lecointe, in a Nieuport type 29 (300 h.p. Hispano Suiza), won the race, thus retaining the Cup for the Aero Club of France. His time over the course of 187½ miles was one hour, six minutes, seventeen and a half seconds. All American entries were withdrawn. (Sept. 27, 1920).

Fifteen Years Ago

Capt. Dieudonne Costa and Maurice Bellonte, who made the first non-stop flight from Paris to New York, made a 15,000-mile good will tour of the United States. (Sept. 15-Oct. 10, 1930).

A national soaring contest was held at Elmira, N. Y., under the auspices of the National Glider Association. (Sept. 21-Oct. 5, 1930).

The Middle Atlantic States Traffic and Aviation Conference was held at Philadelphia, Pa., under the auspices of the Chamber of Commerce of the United States and the Aeronautical Chamber of Commerce. This was to be followed, Sept. 25-26, by the New England States Traffic and Aviation Conference at Boston, Mass., under the same auspices. (Sept. 23-24, 1930).

Daniel Guggenheim, nationally known figure, died at Port Washington, Long Island, N. Y. (Sept. 28, 1930).

Leroy Manning established a speed record for 100 kilometers with pay load of 2,000 kilograms, of 164.43 mph at Dearborn, Mich. The plane flown was a Ford, with 3 Pratt & Whitney Wasps. (Sept. 28, 1930).

Obituary

C. W. Loos

Charles W. Loos, vice president and director of Curtiss-Wright Corp., died August 1 in New York at the age of 57. As vice president in charge of airports, Loos handled real estate transactions in connection with the company's expansion from 4 plants to 17 in the present war. Loos joined the Curtiss Flying Service in 1928 and was appointed vice president and director of Curtiss-Wright in 1936.

Joseph Parker

Joseph F. B. Parker, well-known Republic Aviation test pilot was killed Aug. 23 when he lost control of his plane while taking off from the Ie Shima island air strip. A former Air Forces pilot with nine years of service, he became chief test pilot for Republic and rendered invaluable aid to the Army Air Forces in teaching young pilots the transition to the P-47 Thunderbolt in all our theatres of combat.

(Many of these booklets may be obtained from American Aviation Book and Periodical Dept., American Bldg., Washington 4, D. C.)

The potential market awaiting U. S. foreign traders in Latin America is the subject of a new booklet prepared for distribution by Pan American Airways. "The Wealth of the Other Americas" contains data on trade and industrial activity in the Latin American republics, as well as maps and descriptive matter of each country and its people.

"Back on the Air Map" is the title of an illustrated booklet issued by The Philadelphia Record in commemoration of the recent opening of the new Northeast Airport. The booklet contains numerous editorials and feature articles "that kept aviation alive in Philadelphia . . . and helped her become of 'air-age'" and feature reprints of a column "Aviation—Today and Tomorrow" which it terms "The laymen's newspaper school-room on aviation." Copies are available free from S. B. Hill, manager of national advertising, The Philadelphia Record.

The Magnesium Division, Dow Chemical Co., Midland, Mich., has just issued "Technical Memorandum No. 10" covering the emergency repair of magnesium parts by gas welding.

Manufacturers Screw Products, Chicago 10, Ill., has published a new illustrated catalog of Stronghold Screw Products. Designated as Net Price Catalog No. 15, the 136-page booklet is thumb-indexed for easy reference.

"Make the Skyways Your Highways" is the title of a 20-page illustrated booklet designed to spur interest in private flying which is now being distributed by The Firestone Tire & Rubber Co., Akron, Ohio. It shows that air travel already is within the reach of virtually every American.

Fairchild Aircraft Division has issued a new sales folder on "The Fairchild Packet." It contains all releasable specifications and performance figures together with 10 black and white reproduction of various Packet features.

BLUEPRINT FOR WORLD CIVIL AVIATION. Department of State. Obtainable from Supt. of Documents, Government Printing Office, Washington, D. C. 15c.

This pamphlet reprints recent magazine articles by four members of the U. S. delegation to the Chicago International Civil Aviation Conference of 1944. The articles, some of which were also given as speeches, are by Adolf A. Berle, Jr., then Assistant Secretary of State; Stokely W. Morgan, chief of the civil aviation division of the Dept. of State; William A. M. Burden, Assistant Secretary of Commerce; and Edward P. Warner, vice chairman of the Civil Aeronautics Board. The pamphlet is listed as Publication 2348, Conference Series 70, of the Dept. of State. Because these four articles contain much of U. S. foreign air policy, the pamphlet is recommended for those who do not have copies of the originals in their files.

OLD LEATHERFACE OF THE FLYING TIGERS, The Story of General Chennault. By Keith Ayling. 274 pp. The Bobbs-Merrill Co., New York, Indianapolis. \$2.50.

This is a heart-warming picture of a hero's development from childhood to a great leader. The indomitable spirit of Chennault in overcoming almost insurmountable obstacles pervades the book and leaves the reader with admiration that a person should have such courage to follow his ideals through. The tales of childhood pranks, athletic prowess, and nature lessons, and the stories of thoroughness, determination, and daring which carried Chennault through early teaching and Army days, all lend interesting side-lights for the reader in understanding this complex character who has earned such great respect from his men.



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Trend of

(As compiled and edited by Clifford Guent)

Personalities in the News: When Brig. Gen. Harold Harris leaves the Air Transport Command he will not return to Pan American-Grace Airways of which he was the founder and vice president, but will join another U. S. carrier flying overseas. . . . Look for another Brigadier General, Larry Fritz, to take similar action. It is understood he will not go back to TWA with which he was long associated, but will go with another airline. . . . Ken Ellington is leaving the Aircraft Industries Association after opening and managing its New York office for several months. He will be succeeded by Phil Hartman, fresh out of the armed service. . . . Brig. Gen. Edwin W. Rawlings is now chief of the Procurement Division, Air Technical Service Command, with which has been combined the Readjustment Division. Gen. Rawlings has one of the top-notch war records as administrator of the Aircraft Scheduling Unit. Brig. Gen. D. C. Swatland, who headed the former Procurement Division, has gone back to his New York law firm.

The CAB Vacancy: Apparently first in the running in administration circles for the upcoming vacancy on the Civil Aeronautics Board is a top flight engineer long associated with the manufacturing industry. He is a square shooter, currently with one of the big eastern firms.

One big Army Air Forces general has been considered for the appointment, but begged off because it would mean too great a personal sacrifice. Deputy CAA Administrator Charlie Stanton, proposed earlier, is not now under consideration. An outside boom has been underway for Col. Harold Hartney, a World War I aviation figure and long an aviation consultant in Washington. The Air Line Pilots Association, among others, has wired President Truman endorsing Hartney, but he has not yet been given serious consideration in Washington quarters where the decision will be made. Others talked about here and there, but not actually candidates, include Grover Loening, currently an NACA consultant, and J. Parker Van Zandt, now with the Brookings Institution.

Edward P. Warner, who is leaving CAB to take the full-time post as president of the Provisional International Civil Aviation Organization, will submit his resignation about Sept. 20. His post is expected to go to a man with a solid technical background, because of Warner's comparable background.

Incidentally, another vacancy on CAB, by resignation, is expected about the first of the year.

Republic to Convert Douglas Planes: The highly competitive transport plane field will be given a new twist soon when Republic Aviation Corp. sets up a project to convert Douglas C-54's for one or more of the airlines. Republic will obtain the four-engine craft from the Army. Along with Republic's plans to manufacture the Rainbow transport, this activity will give the company much engineering experience in the transport field.

There is other interesting airplane conversion news. Hughes Aircraft Co. is converting medium bombers into executive transports at Culver City—taking Douglas B-23's from surplus and selling them, converted, at around \$80,000. Half a dozen already have been sold. Aero Services, Inc. of Van Nuys, Calif., has discontinued converting DC-3's for the airlines, and is now converting surplus craft into executive-type planes for private users. These include Lodestars, Cessnas and Lockheed 12's.

A ready market has been found among business firms for "executive transports."

PCA's Financing Plans: Pennsylvania-Central Airlines didn't tell all the story when it issued a press release announcing issue of \$10,000,000 in 15-year convertible income debentures underwritten by White Weld & Co. and by Carl M. Loeb, Rhodes & Co. of New York. The press release said only that the funds were to be used to purchase new aircraft. But when the registration statement was filed with Securities and Exchange Commission, PCA told SEC it would use approximately \$7,500,000 of net proceeds to buy additional aircraft, necessary operating property and other equipment. Other airlines are speculating on what may be covered by the phrase "operating property."

of The News

Guest, Managing Editor, American Aviation Daily)

Big Sums Involved in New Rulings: Ruling on advertising cost allowances in CPFF contracts in connection with a St. Louis aircraft manufacturer, Comptroller General Lindsay Warren has thrown a monkey wrench which may clog up aircraft contract settlements for months and involve millions of dollars.

Despite the fact that the policy has been approved by the Army Board of Contract Appeals and specific authorization has been embodied in the Technical Audit Manual and in procurement memos from the ATSC, the comptroller general recently ruled that advertising in trade and technical journals is not a "reimbursable item of expense."

The Army, however, shows no inclination to agree with the comptroller general. One high officer said the Army expects to retain its previous auditing policy. Naval fiscal officers said emphatically they will continue to consider such advertising as items of cost. (Terminated contracts are not affected.) Thus three alternatives appear: The comptroller general will have to reverse himself, or hold up payments, or the whole thing will have to be threshed out in court.

Another ruling significant to the aircraft industry is due momentarily from the Office of Contract Settlement which is preparing a regulation governing the application of state franchise taxes to war contracts. In states such as California and New York where franchise taxes are graduated according to volume of business, tremendous sums are involved.

NASAO Hot Meeting Coming: National Association of State Aviation Officials will have a hot meeting in St. Louis Oct. 1-3 at which the top subject will be the proposed uniform codes for regulation of flying activities within the states. CAA's Administrative Assistant George Burgess had given some of the state boys the idea that the codes were acceptable to CAA. Now some state people have been advised that CAA doesn't like them. NASAO will staunchly defend the codes as now worked out.

Quite a number of new state aviation officials, recently appointed, will be seen at the meeting for the first time. Some states have "cleaned house" and there will be many new faces.

DC-4 Blueprints and the Japs: The U. S. did no favor to Japs by selling the Douglas DC-4 and blueprints to the Japs. We knew the Japs could never put it together. But in trying to do so Japs undoubtedly spent millions of man hours trying to figure it out, and otherwise man hours would have been devoted to war preparation and production. It has now been proved pretty well that man hours win wars, and the diversion helped just that much for our side.

Industry Observations: At long last, Boeing Aircraft Co.—last of the big West Coast companies to do so—is opening a New York office. It will be at 30 Rockefeller Plaza with D. B. Martin, formerly London representative for Boeing, in charge. . . . War and Navy Departments for some time have been preparing to go before the House Appropriations Committee to ask deficiency appropriations covering remainder of the fiscal year's aircraft production. Despite severe slashes, it is still a good bet that military procurement of aircraft will settle down somewhere near the figure of \$1,000,000,000 a year. . . . Manufacturers of small aircraft are complaining against the RFC policy which permits the original manufacturer to take over and sell surplus engines of his own make. . . . McDonnell Aircraft Corp., taking over nearly 2½ million square feet of the St. Louis Lambert Field factory space vacated by Curtiss-Wright, withheld announcement as to its plans, but observers think that jet plane development is one of the big items. . . . The AAF is actively trying to sell ground equipment in Europe to the airlines given transatlantic routes. . . . Tiring of NACA's inertia in connection with the proposed program for scientific crash testing of surplus aircraft, Aircraft Industries Association recently wrote the War and Navy Departments asking them to get behind the plan. . . . Skyways Magazine is planning a Spanish edition to circulate throughout Latin America. It will have a popular appeal.



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The Air Trade Routes of the South, developed by Delta over the past 16 years, are thus rounded out into even more complete Southern coverage—and Chicago becomes the first of a series of key city terminals outside the

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The New South, the industrial and air-conscious South, needs additional service to the nation's business centers. *Detroit, Cleveland, Kansas City, Washington and New York* are other natural destinations for Delta-developed traffic.

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The Air Line of the South

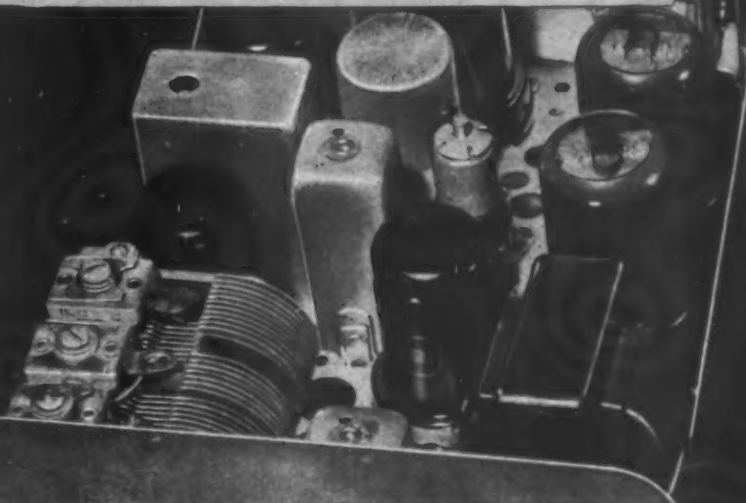
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When the last bullet is fired industry's *know-how* will be building a better peacetime world.

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This Issue

Further Curtailment of Industry Expected

Seven Aircraft Models Added to List of Cutbacks; Engine Makers Hit Harder than Airframe Companies

THE AAF last fortnight listed seven aircraft models on the list of latest cutbacks since V-J Day, and indicated that the manufacturing industry was in for further curtailment.

Aircraft affected in the latest cutback were the B-29, B-44, P-47N, P-80, P-61, P-51H and RP-63. Engine companies reportedly were hit even harder than the airframe companies.

The cutbacks came as a severe blow to the industry, far worse than had been anticipated after the initial V-J Day curtailments were announced by the AAF.

B-29 procurement for the remainder of 1945 is to be cut 62%, representing a cut of 67% through the first six months of 1946. B-44s—modification of the B-29 using Pratt & Whitney Wasp Majors—will be cut 70% for the balance of the contract.

AAF announced no change in the contract for P-47s, but this aircraft will be out of production as of Nov., 1945.

The P-80, through the first six months of 1946, will have a cut in the monthly rate of production amounting to approximately 60%.

The P-61 will be cut 53% for the last four months of 1945. The P-51H will have a cut of approximately 34% over the balance of 1945. The RP-63, an adaptation of the P-63 used for gunnery work, will be cut approximately 60% for 1945.

As a result of the B-29 slash, Boeing Airplane Company's Wichita plant has been shut down and approximately 18,000 employees laid off. Repercussions to the contract cuts were heard in Seattle, Boeing's home plant.

Mayor Devin of Seattle protested to President Truman, declaring that the cancellations threw 22,000 persons out of work on 15 minutes notice. Devin said the workers should not be laid off without warning or a tapering off process.

Simultaneously, the Aero-Mechanics Union appealed directly to the state congressional delegation to attempt to have part of Boeing's B-29 work reinstated.

Meanwhile, the financial impact of progressive cutbacks continued to show up in Securities and Exchange Commission reports. Twelve aircraft manufacturers were among companies which recently filed quarterly statements with SEC showing how much of each quarter's sales was on war orders and how much war business remains uncompleted.

Cancellations were moving so rapidly, however, that SEC said that "a very material part of the dollar amount of the unfilled war contracts reflected in these reports may have been terminated since the filing of these reports."

Ryan Aeronautical Co., reported term-

inated contracts amounting to \$51,000,000, and said that war contracts totaling \$27,000,000 remain after contract terminations.

Consolidated Vultee Aircraft Corp., reported contract terminations aggregating \$243,000,000 from July 23 through Aug. 22, leaving the company and subsidiaries

with unfilled war contracts amounting to \$256,000,000.

Lockheed Aircraft Corp., reported additional terminations totaling \$33,658,129 (previous report, \$191,255,794), and said this leaves it with war contracts totaling \$151,000,000. These figures did not include the latest P-80 cutback.

Quarterly reports filed with SEC by nine other aircraft companies are shown in the following table:

(Dollar Amounts in Thousands)

Registrant and Period	Total Sales	War Sales	Unfilled War Contracts Beginning of Period	Unfilled War Contracts End of Period
North American Aviation				
12 mos end June 30	\$510,644	\$510,644	(a) 1,006,000	(a) 520,000
Bendix Aviation				
9 mos end June 30	499,446	494,971	1,018,901	459,872
Cons. Vultee Air				
6 mos end May 31	271,803	271,694	1,673,000	674,000
Sperry Corp.				
6 mos to June 30	*187,000	*185,700	(d) 353,600	(d) 231,700
United Aircraft				
3 mos end March 31	165,516	163,721	(g) 857,153	(g) 968,077
3 mos end June 30	166,385	163,905	(g) 968,077	(g) 840,597
Republic Aviation				
6 mos end June 30	147,892	147,892	401,000	303,000
Bell Aircraft				
3 mos end March 31	(k) 92,858	(k) 92,858	*459,300
3 mos end June 30	(k) 84,144	(k) 84,144	*334,700
Beech Aircraft Corp.				
3 mo end Sept. 30/44	25,980	24,837	183,615	162,281
3 mo end Dec. 31/44	33,643	32,320	162,281	130,110
3 mo end Mar. 31/45	39,451	38,311	130,110	91,724
3 mo end June 30/45	36,376	35,255	91,724	47,256
Fairchild Engine & Air				
3 mos end March 31	12,613	12,568	83,244	108,315
3 mos end June 30	13,367	13,315	108,315	93,115

* Estimated. (a) Unfilled orders do not include termination claims terminated in whole or in part; and do not include "open-end", "requirements" or similar contracts except to the extent that calls or orders have been received therefor. (d) Unfilled orders exclude "open-end", "requirements" or similar contracts except to the extent that orders have been placed therefor. (g) Open end spare parts contracts not considered in this amount except to extent of definite orders or commitments. (k) Includes cost-plus-fixed-fee contracts.

Details on Five New Transports Announced

ON THE following pages American Aviation presents all available details on five new transport aircraft which are now being offered to the airlines by this country's manufacturers. One of these aircraft—the Republic Rainbow—is designed for over-ocean service, and another—the Boeing 417-22—is planned for local and feederline service. The other three—Consolidated's 110, Douglas's DC-8 and Martin's 202—are all designed to meet the ATA A-1 specification, and are reported to have been entered in the American Airlines competition for a 100 ship contract.

Smallest of the three is the Convair 110 which is designed for 30 passengers and has a gross weight of 32,300 lbs. It is powered, by two Pratt & Whitney R-2800-C engines. Convair is offering in addition an alternate version with a gross weight of 27,800 lbs.

The Martin 202 is likewise powered by two R-2800-C engines and has a gross weight of 34,300 lbs. Various interior arrangements are being offered ranging from a 30-seat plus cargo standard model to a 42-seat all passenger model. Larger propellers on the 202 may make it able to absorb greater horsepower than the 110.

The Douglas DC-8 represents a radical new concept in transport design. Its two liquid-cooled Allison V-1710 engines are located under the forward cargo compartment in the fuselage and drive contra-rotating pusher propellers behind the tail by means of an extension shaft. The DC-8 has a gross weight of 39,500 lbs. and will accommodate from 38-48 passengers. All three of the above claim direct operating costs in the neighborhood of 1c per passenger mile with a 100 percent load factor.

Revolutionary Douglas DC-8 Proposed to Major Airlines

V-1710s in Fuselage Drive Dual Rotation Pusher Props

By SYDNEY CARTER

PROPOSALS for a new medium transport more revolutionary in its conception than the famed DC-1 are being circulated to the airlines by Douglas Aircraft Co. AMERICAN AVIATION learned this week. Designated as the DC-8-1004, the new aircraft is a low wing monoplane powered by two liquid cooled Allison V-1710 engines with two speed superchargers, rated at 1,630 hp each for take-off, which are located in the fuselage under the forward cargo compartment between the pilots' cockpit and the main cabin, and drive counter rotating pusher propellers behind the empennage by means of extension shafts.

Three-bladed, full feathering, reversible Curtiss dual rotating propellers of 15 ft. 2 in. diameter are proposed in the current specification.

The standard version of the DC-8 will have a gross weight of 39,500 lbs. and a weight empty of 23,915 lbs. It is designed to carry 38 passengers normally and 48 passengers through the use of folding seats which open out into the aisle plus cargo. Two alternate versions provide for 34 passengers plus cargo, and 34 passengers normal 43 with folding seats plus cargo.

All-Metal Construction

The new aircraft has a span of 110 ft. 2 in., overall length of 77 ft. 10 in., overall height of 25 ft. 9 in., and main gear tread of 13 ft. 7 in. Maximum height and width of the fuselage cross section is 121 in. Area of the Douglas airfoil wing is 1104 sq. ft. including ailerons, and wing loading in take-off gross weight condition is 35.9 lbs./sq. ft. Power loading at take-off gross weight is 12.3 lbs./bhp. Aileron area of the DC-8 is 73.5 sq. ft. with a 2.8 sq. ft. tab on the right aileron only. Flaps will have a 30 ft. 10 in. span at either side, and a total area of 182.6 sq. ft. Total area of the horizontal tail surfaces, which have a 36 ft. 5 in. overall span, is 276 sq. ft. and of the vertical tail surfaces 160.6 sq. ft.

The DC-8 will be of all-metal construction utilizing high-strength alloys—presumably 75ST or R-301. The wing will be of full cantilever type comprised of a two-spar main panel and two detachable monocoque tip sections. The main panel will incorporate two integral fuel tanks and wheel wells for the main gear with folding doors to obtain a faired contour in flight. Flaps will be of the partial span single slotted type. Ailerons will be of fabric covered metal construction, but all other control surfaces, fixed and movable, will be metal covered. The fuselage will be of all-metal semi-monocoque construction with the nose and tail sections removable.

The fuselage will be divided into six compartments—a pilots' compartment near the nose, a cargo compartment aft of the pilots' compartment, an engine compartment beneath the cargo compartment, a main passenger cabin incorporating storage and buffet provisions, a toilet to the

rear of the main cabin, and a cargo compartment aft of the main cabin.

The pilots' compartment will incorporate the "Douglas double bubble" type canopy, and will have impact resistant windshield panels of double-paned glass with provisions for anti-icing.

The forward cargo compartment will have a usable volume of approximately 234 cu. ft., and the aft cargo compartment a usable volume of approximately 215 cu. ft. Separate loading doors will be provided for both cargo compartments on the left side of the fuselage—the forward door measuring 40 x 60 in. and the aft door 27 x 40 in. Tie-down fittings will be provided in both compartments.

The main passenger cabin will have a movable front bulkhead to permit rapid

Aviation Calendar

Oct. 4-5—Institute of Aeronautical Sciences, Detroit area meeting.

Oct. 15—PICAO Interim Council reconvene in Montreal.

Oct. 16—First annual meeting, International Air Transport Association, Montreal.

Oct. 24-25—Kansas State Airport Conference, Kansas State College.

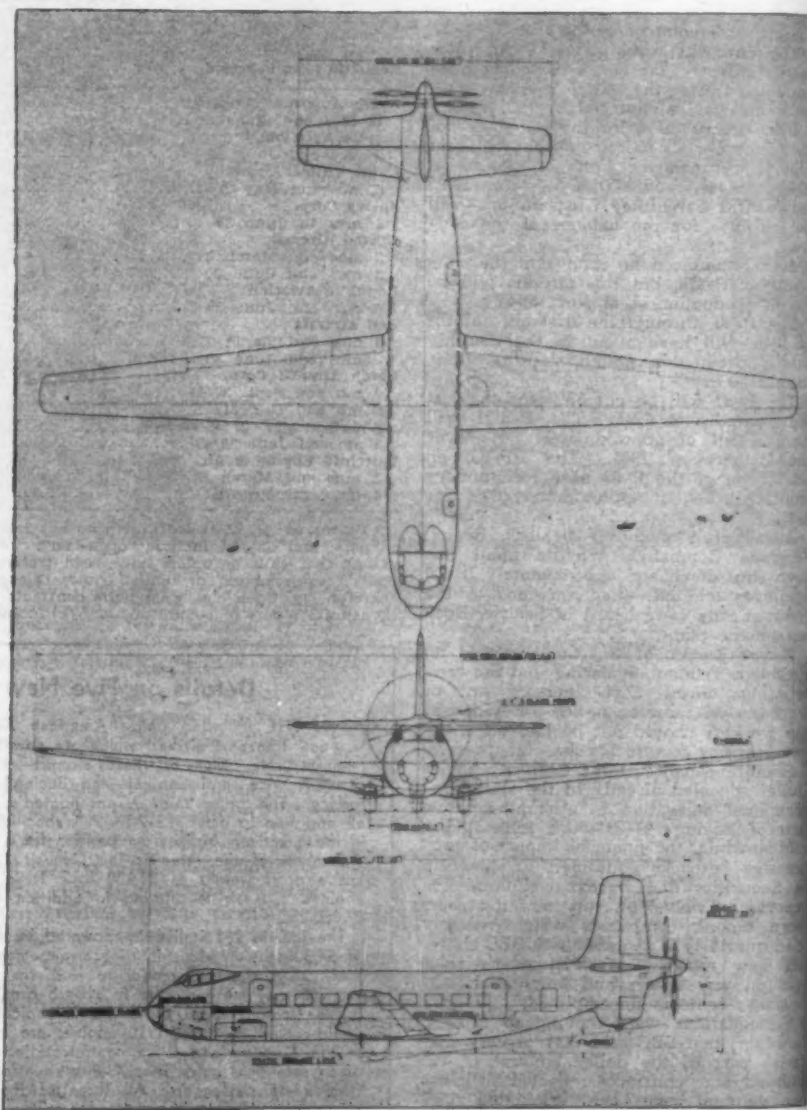
Oct. 25—Institute of Aeronautical Sciences, Washington, D. C., area meeting.

Oct. 31-Nov. 3—National Aviation Clinic, Oklahoma City. Pre-clinic conference Oct. 27.

Nov. 5-7—Annual meeting, National Association of State Aviation Officials, St. Louis.

Nov. 15-16—Arizona State Aviation Conference, Tucson, auspices Tucson Chamber of Commerce.

Dec. 17—Institute of Aeronautical Sciences, Washington, D. C., meeting.



Three view drawings of the DC-8-1004.

and easy conversion of the forward 10 ft. into a cargo compartment. It will move in increments of 36 or 40 inches. Passengers will be seated in two rows of double seats spaced on 36 in. centers in the 38-48 passenger version, and on 40 in. centers in the 34 and 34-43 passenger versions. Additional aisle seats will fold out from the row on the right side. Aisle width will be 14.5 in. with the aisle seats, and 27.5 in. with these seats stowed. Extra large 20 x 30 in. windows will give excellent visibility. The 40 x 72 in. passenger entrance will be located on the left side of the fuselage aft of the wing. The buffet will line the entranceway at either side, and a luggage and coat rack will be provided opposite the entrance.

The DC-8 will have an hydraulically operated fully retractable tricycle landing gear with single wheels on both the steerable nose gear and the main gear. In addition there will be a special tail bumper consisting of a single wheel mounted on a fixed strut with a conventional shock absorbing strut, partially housed in the vertical stabilizer, and designed to protect the propellers and structure in the event of a tail down landing. Propeller ground clearance for a tail down landing will be 10 in., and the propeller disk will be 27 in. aft of the upper and lower rudder, and 26 in. aft of the elevator.

Wing Heat De-icing

Heat anti-icing will be used for the leading edges of the wing, vertical and horizontal stabilizers, and for the pilots' windshields, and alcohol anti-icing for the engine induction system. Suitable anti-icing will also be provided for the propellers.

Optional installations, which it is specified, however, may affect weight, balance, performance, cost and deliveries, include an integral passenger loading step to be interconnected with the main passenger door; a passenger baggage rack in place of the aft buffet section; an additional passenger entrance door forward; an additional passenger lavatory; and provisions for cabin pressurization.

Performance-wise, Douglas is reportedly guaranteeing a level flight speed of 270 mph (within plus or minus 3 percent) at low blower critical altitude of 10,000 ft. at the maximum take-off and landing gross weight of 39,500 lbs. and a V_{LO} of 78.5 mph. Other guaranteed performance includes absolute range at approximately

176 mph with a fuel capacity of 1,000 gal. and no allowance for warm-up, taxi, take-off, climb, maneuvering or reserve, 2,680 mi. (within plus or minus 5 percent); one engine maximum operating altitude for .02 V_{LO} climb at rated power, 11,000-13,000 ft.; CAR take-off field length at sea level, 3,950 ft. (within plus or minus 10 percent); and CAR landing field length at sea level with practicable use of reverse pitch propellers, 3,950 ft. (within plus or minus 10 percent).

Estimated but not guaranteed performance included a level flight speed with maximum cruising power of 295 mph at high blower critical altitude of 20,000 ft.; 230 mph at sea level; and 230 mph at 10,000 ft. with 60 percent sea level rated power. Two engine rate of climb is estimated at 830 ft./min. at 10,000 ft.; two engine service ceiling (100 ft./min. rate of climb) at 30,000 ft.; and one engine maximum operating altitude for a .04 V_{LO} rate of climb at 5,500 ft.

4,600 Ft. For Takeoff

It is expected that at an altitude of 5,000 ft. and a gross weight of 37,800 lbs. the DC-8 will require a CAR field length of 4,600 ft. for take-off and 4,500 ft. for landing with practicable use of reverse pitch propellers.

Fuel consumption for 300 mi. range at an average air speed of 270 mph and an operating altitude of 10,000 ft. is estimated at 1,153 lbs., for 600 mi. at 2,305 lbs., for 1,000 mi. at 3,844 lbs., and for 1,560 mi. at 6,000 lbs. or 1,000 gals. Take-off gross weight is limited to 38,525 lbs. for a 300 mi. range, and 590 mi. is the shortest range for which the full 39,500 lb. gross may be used.

Similar figures for 10 percent above speed for maximum lift over drag show 720 lbs. for 300 mi. (180 mph cruise); 1,425 lbs. for 600 mi. (179 mph cruise); and 2,342 lbs. for 1,000 mi. (179 mph cruise). Take-off gross weight in this operation is limited to 37,900 lbs. at 300 mi., and 38,600 lbs. at 600 mi., the shortest distance for which full design gross may be used being 975 mi.

In weight empty condition with landing gear extended the guaranteed center of gravity location is 30.7 percent MAC. Forward cg limit, both with gear extended and in flight, is 20 percent MAC; and aft cg limit for both conditions is 40 percent MAC. All cg guarantees are within a tolerance of plus or minus 3 percent.

William Allen Named President of Boeing

William M. Allen, a member of the Seattle law firm of Holman, Sprague & Allen, and for 14 years a Boeing director, was unanimously elected president of the Boeing Airplane and Boeing Aircraft Companies at a meeting of the board of directors in Seattle yesterday. He will assume his new duties immediately, filling a vacancy created by the death of Philip G. Johnson on Sept. 14, 1944.



William M. Allen

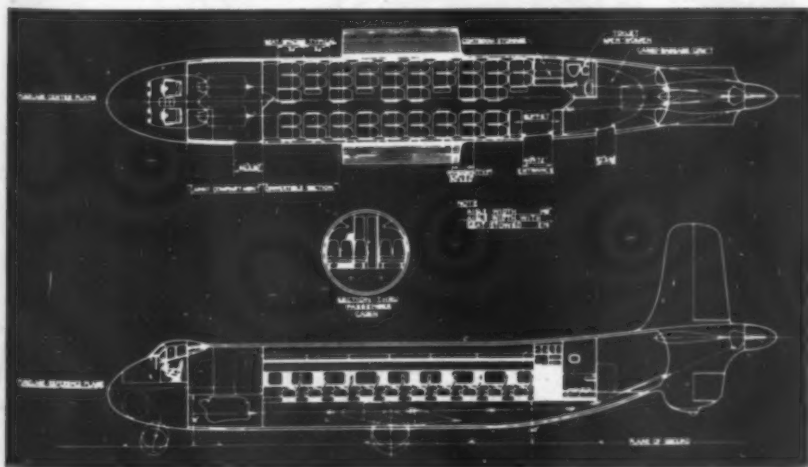
In announcing Allen's election, C. L. Egtvedt, chairman, who has also been acting as chief executive officer, said that the board has for some time desired to elect Allen to the position, but that it was not possible for him to accept while several members of his law firm were absent because of military service.

Egtvedt added: "In his position as a member of the board during the past 14 years, Allen has been intimately associated with Boeing, its staff and its activities in peace and in war. He has represented the company in many types of business contacts both in Seattle and in the East, and has regularly participated in its business decisions."

Allen became a member of the board of Boeing Airplane Co. in July 1931. Previously, upon the formation of Boeing Air Transport, Inc. in 1927 and its purchase of Pacific Air Transport in 1928, he served as counsel and as a member of the board of these companies which later became United Air Lines.

NASAO to Meet Nov. 5

Sheldon B. "Buck" Steers, president of the National Association of State Aviation Officials, has announced the 1945 annual meeting of the association will be held in St. Louis Nov. 5-7.



Interior layouts of the standard 38-48 passenger version of the DC-8.

Boeing 20-Passenger Feeder Revealed to Members of FAA

High Wing Monoplane Has Low Floor for Loading

THE BOEING 417-22, a 20-passenger feeder transport designed to the specifications of the Feeder Airline Association, was revealed to FAA members at their first annual meeting in Washington recently.

Boeing officials emphasized, however, that the 417-22 as presented was still a "paper aircraft," and that the design was still open to changes in accordance with any recommendations that might be made by FAA members. In this connection Boeing passed out a questionnaire to be filled in by the operators in which they could specify performance and design requirements, type and make of power plants, quantities contemplated, delivery schedules desired, and any other characteristics that would go to make the 417-22 better able to fill their requirements. Answers to these questionnaires, Boeing said, would play an important part in determining the final form of the aircraft.

In its present form, as designed by engineers of Boeing's Wichita Division, the 417-22 is a high wing monoplane powered by two Ranger engines developing 700 hp each at take-off. One alternate version is powered by two 700 hp Wright Cyclones.

Span of 80 Feet

The new airliner has a span of 80 ft., overall length of 55 ft. 4 in., overall height of 18 ft. 10 in., and wing area of 508 sq. ft. Gross weight for both take-off and landing is 18,400 lbs., and wing loading 36 lbs. per sq. ft. Manufacturer's weight empty is 11,690 lbs., and operating weight empty including a 2-man crew plus baggage, passenger service equipment and minimum operating oil is 12,210 lbs., leaving 6,190 lbs. for fuel and payload.

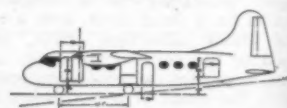
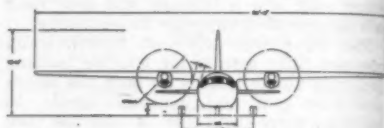
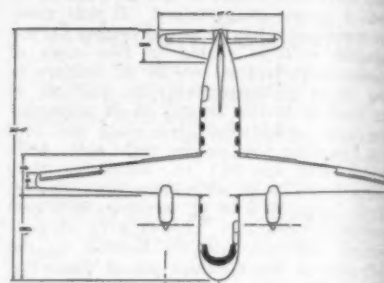
The high wing design of the aircraft results in a low floor level to facilitate rapid passenger and cargo loading without the use of extensive station equipment. Landing gear is of tricycle type with dual-wheeled main gear, and the main as well as the nose gear retracts fully into the fuselage permitting the use of small engine nacelles, and providing a wing-flap combination of unusual aerodynamic cleanness. Tread of the main gear is 15 ft. 9 in., and a 31 in. propeller clearance is provided. Provision is made also for the use of propellers with a zero thrust setting so that passengers may be loaded without stopping either of the engines, and until such propellers become available, it is understood that the design

provides for a steerable nosewheel specifically planned for one-engine ground handling so that the engine on the passenger loading side can be cut while taxiing in to the loading platform and started up again while taxiing back out onto the runway.

Although the present version is planned primarily for low to medium altitude operation, provision has likewise been made in the basic design for future modification of the passenger cabin to permit pressurization.

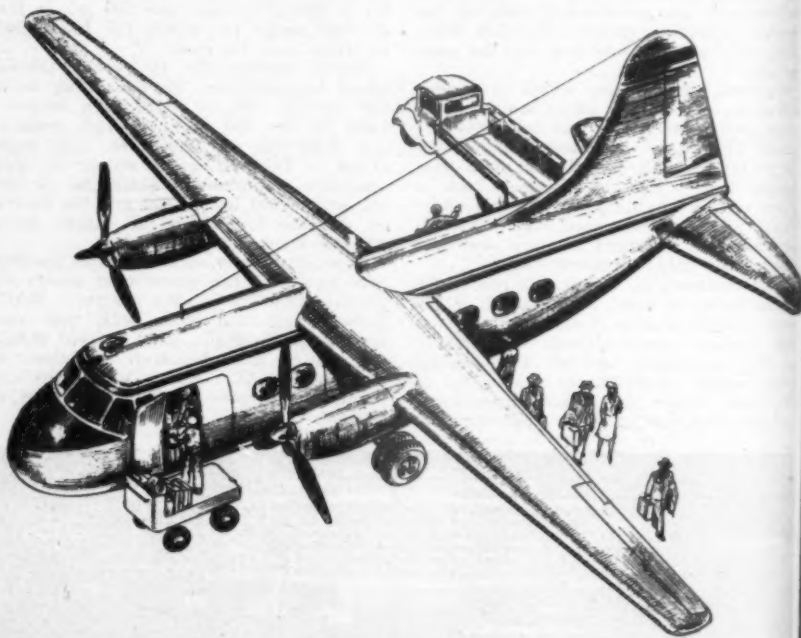
The cabin has a maximum width of 102 in. Passengers are accommodated in two cabins forward and aft of the center wing, the former seating eight and the latter 12. Baggage stowage facilities are provided amidships immediately adjacent to the passenger entrance so that each passenger can carry his own luggage aboard. Restroom facilities are provided in the aft cabin.

There are two cargo compartments, one forward of the forward cabin and the other aft of the aft cabin, with truckbed height loading doors, measuring 60 x 63 in. for the forward compartment and

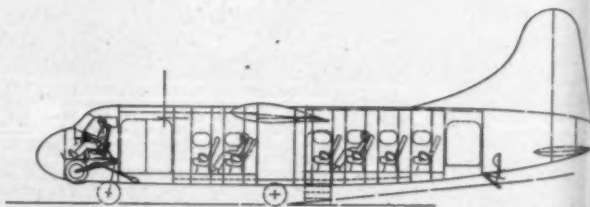
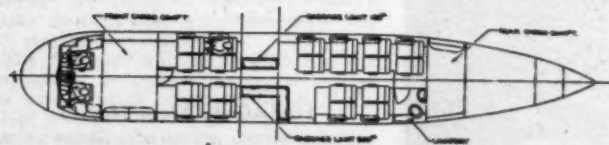


Three View of Boeing 417-22

40 x 50 in. for the aft. The forward or main cargo compartment has a volume of 150 cu. ft., and the rear compartment a volume of 96 cu. ft. In addition, the for-



Artists Drawing of Boeing Feeder Transport



Passenger Seating Arrangement of Boeing 417-22

ward passenger section can be converted to cargo. Special provision has also been made for the installation of mail pick-up equipment in the main cargo compartment.

Estimated performance figures based on the Ranger engine installation give the 417-22 a maximum speed at Metro power of 243 mph at 8,000 ft., and a cruising speed at 60 percent Metro power at sea level of 200 mph at 8,000 ft. Block speeds range from 142 mph for a 50-mi. trip to 190 mph for a 500-600-mi. trip. Range with 360 gal. of fuel is in excess of 1,000 mi. Wing tanks on the 417, incidentally, are located outboard of the nacelles to provide greater safety in the event of forced landings. Landing speed with flaps, 71-73 mph.

The 417 will have a maximum sea level rate of climb of 1,302 ft./min., and a service ceiling of 24,800 ft. The one-engine inoperative ceiling is estimated at 12,600 ft.

The aircraft is designed to operate in accordance with CAR requirements from a 3,500-ft. field—a CAR field length of 3,150 ft. being required for take-off and of 3,280 ft. for landing. Actual take-off over a 50-ft. obstacle is 1,958 ft., and landing distance over a 50-ft. obstacle 1,970 ft. The 417 will be equipped with hydraulic brakes.

Payload of the 417 will range from 5,600 lbs. for 50 mi. to 4,650 lbs. for 600 mi. with contact flight reserve, and from 5,050 lbs. for 50 mi. to 4,250 lbs. for 600 mi. with ATA fuel reserves for instrument flight. Payload for a 200 mi. range is 5,400 lbs. contact and 5,000 lbs. instrument. Maximum payload limited by space is 6,110 lbs.

Ton-mile direct operating costs, based on 60 percent Metro power cruise, zero wind, and a cruise altitude based on 400 ft./min. climb and descent but not exceeding 10,000 ft., range from 10c for 175-200 mi. to 11c for 600 mi. with contact flight loads, and from 10.8c for 200 mi. to 12c for 600 mi. with instrument flight loads. Direct costs for 50-mi. range is estimated at 11.5c/ton mi. contact and 11.9c/ton. mi. instrument.

Boeing engineers have estimated that a 36.5 percent load factor is all that would be needed to break even with the 417.

Hannegan Recommends Slash In Air Mail Postage Rates

A reduction in air mail postage rate to five cents an ounce will be asked by Postmaster General Robert E. Hannegan who recently told the Aviation Section of the New York Board of Trade the present eight cents an ounce rate will automatically drop to six cents six months after the war's official end.

Speaking at a luncheon celebrating the 25th anniversary of the opening of transcontinental air mail, Hannegan said he intended to press for the reduction immediately in the belief that more people would use air mail if it were cheaper. "The resulting increased volume," he said, "would bring down the unit cost of delivery, and, within a reasonably short time, justify the cut."

RFC to Conduct Test Sale Of Surplus Aircraft Engines

Majority Above 450 HP; Industrial Uses Promoted

PUBLIC DEMAND for an estimated 250,000 surplus aircraft engines to be disposed of will be sampled in a market test sale of 19,073 such engines which the Reconstruction Finance Corporation will conduct throughout the country from October 1 to November 15.

Located at 75 points in 26 states, 9,142 of the engines in this sale vanguard are still mounted on aircraft, while 9,931 are detached. Many are crated and others are "pickled," making full inspection by bidders impracticable, according to the RFC. Examination of engines on craft must also be "visual."

For sales purposes, the engines are divided into two categories: (1) Standard types and models approved for and currently used in commercial and private aviation, or considered to have a postwar market in aviation. (2) Obsolete models and/or those which are not suitable for use in commercial and private aviation without extensive modification.

Although the bidding procedure is being used, the sale is being conducted on a basis of requesting offerings, following receipt of which prices will be determined. Category (1) engines will be sold at prices bearing fair relationship to manufacturers' prices for the same type of engine. Category (2) engines will be sold at prices bringing the maximum net return to the government. After prices have been established for engines of the same model and "reported condition," sales will be made to all persons who have offered an amount equal to or above the price set for engines of the same group.

Some engines are of the type usable in personal aircraft but the majority are

above 450 hp. The former must pass CAA inspection before being installed. Log books on the equipment will be furnished where available, but the buyer is warned of the possibility of error in the keeping of records on such large numbers of engines. However, a successful bidder for an engine described as new will get an engine that has not been used, or his money will be refunded. This constitutes about the only warranty offered.

The RFC, hoping to increase the market for higher-horsepowered engines, has enlisted the aid of a leading engineering firm, Ford, Bacon & Davis, in uncovering other than aeronautical uses for this equipment. There is a possibility that some of the engines built especially for combat operations can be converted to industrial uses.

While some engines have the usual accessories, others may have only a few of them, and others may have none. The RFC states it is impossible to give accurate information concerning this and has stated the policy, "Sales will be made on an 'as is,' said to contain' basis."

At each of the 16 RFC sales-storage depots, a sample engine of each model and type on sale at that location will be on display for visual inspection. Un-crated engines at the Army Specialized Depot, South Bend, Ind., also may be inspected.

A catalog containing description of the engines for sale and a bid form is soon to be distributed to prospective bidders. Bids, which should be accompanied by a 10% deposit in the form of a certified or cashier's check made payable to the RFC, must be received at the Reconstruction Finance Corporation, Aircraft Division, Components Disposal Section, Washington, D. C., before noon, November 15, 1945. All prices will be F. O. B.

Breakdown of Sale Data on the 19,073 Engines

Manufacturer	No.	Per Cent
Franklin	234	1.2
Jacobs	151	.8
Lycoming	4,658	24.4
Allison	3,570	18.7
Packard	244	1.3
Pratt & Whitney	4,263	22.4
Wright	5,953	31.2
Total	19,073	100
Reported Condition	No.	Per Cent
N—(New)	306	1.6
E—(Used but reconditioned)	332	1.7
O—(Used, usable without repairs)	9,271	48.6
R—(Used, usable with repairs)	8,929	46.8
X—(Of no further use as originally intended, but has possible value other than as scrap)	235	1.3
Total	19,073	100
Horsepower		
Under 400 h.p.	26%	
400-650 h.p.	25%	
800-1200 h.p.	44%	
Over 1200 h.p.	5%	

Republic to Make 4-Engined Transport; to Cruise at 400

**Delivery Expected in '47;
To Cost About a Million**

THE LONG AWAITED announcement of Republic Aviation Corporation's entrance into the transport aircraft field was made early this month when the company confirmed formally the reports that it would produce a high-altitude and speedy four-engine transport plane designed to capture inter-continental trade.

Forty passengers and crew of 7 can be accommodated plus 1,600 lbs. of baggage and 1,700 lbs. of cargo.

The name of the new transport is the Rainbow and Republic is giving first delivery dates as early as 1947. The price will be a little over a million dollars per unit.

While no specifications or performance data are being released at this time, Republic officials informed **AMERICAN AVIATION** that the Rainbow has been designed to a new concept of transport airlines economics in which high speed and higher load factors due to relatively small unit size are expected to result in lower operating costs than are possible with larger aircraft which not only have less speed but because of their size must be expected to operate at either lower load factors or less frequent intervals than the Rainbow. The net result of this is that while the larger aircraft will be able to carry more passengers on a single flight, the Rainbow is expected to permit more passenger miles per month per aircraft than any other type yet announced.

According to Don Parker, director of Republic's transport plane department, the Rainbow will have a higher utility factor than any other over-ocean transport currently being considered. Only three aircraft, for example, would be required to provide daily scheduled service between New York and Denmark. He added that according to economic studies made by Republic engineers, the Rainbow is not a luxury aircraft on which extra fares will have to be charged for economical operation, but instead is an economical aircraft which should per-

mit as low or lower passenger fares as any other airliner.

The Rainbow will be powered with four Pratt & Whitney Wasp Major engines currently rated at 3000 hp each for take-off. This is the same power plant installation that is being planned for the Douglas DC-7, Lockheed Constitution, Boeing 377 and Martin Mars. In the Rainbow, however, a special turbo-supercharger arrangement with a booster to produce jet thrust, particularly at the high altitudes at which it will operate, is being used. This is expected to add at least 200 hp to the output of each engine. Nacelle design has been engineered for aerodynamic cleanness as has the bullet shaped fuselage. A tricycle landing gear with single main wheels and a dual nose wheel is currently planned, although many design details naturally are subject to change.

400 mph Cruising Speed

Industry information says the Rainbow will have a guaranteed operating cruising speed in excess of 400 mph at 40,000 ft. and nonstop range with full load of about 4,000 miles. Such performance will put the Rainbow at the top of the list of transport aircraft announced to date, exceeding by a comfortable margin even the Boeing C-97 which crossed the U. S. nonstop at 383 mph. and which will have an operating cruising speed of about 340 mph.

The Republic announcement merely gave the traveling time to various world points from New York, such as 9 hours to London, 5 hours to Mexico City, 6 hours to the West Coast, 12 hours to Rio de Janeiro, and 12 hours to Moscow.

The cabin will be pressurized and numerous luxury features such as a bar, lounge, motion pictures and other items are promised should the purchaser wish to have them installed.

In size the Rainbow will be comparable to the Superfortress. It is said the wing span is 129 feet. Republic expects to release data on the project in a month or two.

The Farmingdale, L. I. company is also making a heavy bid for the private flying market with its Seabee amphibian which has attracted considerable attention.

Northrop Develops Gas Turbine Engine

Northrop Aircraft is developing its own gas turbine engine, LaMotte T. Cohu, general manager and chairman of the board, disclosed last fortnight at a press conference in Los Angeles.

Although it is understood that specifications for the B-35, the Northrop Flying Wing, call for pusher-mounted 3,000 horsepower Pratt and Whitney Wasp Majors, Cohu indicated work on the new gas turbine power plant was undertaken as the logical method of propulsion for the new type craft.

"With the gas turbine you get almost as much power as with jet and still retain the economy of propeller propulsion," Cohu said. "Moreover, jet cuts range and load practically in half."

Because the Flying Wing still is on the army secrecy list, Cohu declined to say when the craft will be ready for test flight but he said, "It will be very soon."

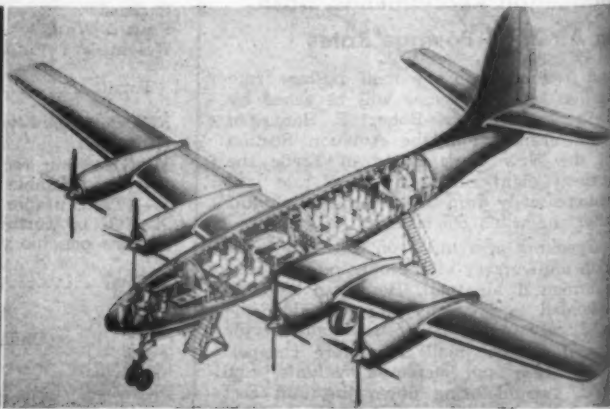
The Flying Wing is practical for commercial use, Cohu said. In answer to a question as to how big a commercial version should be, Cohu said, "It should gross 100,000 pounds and really should be twice as big as that."

Cohu also revealed that Northrop is now flying a new military plane and will have it in production in January or February. He said he could not reveal details of the plane because it is still on the secrecy list.

Of Northrop's \$51,000,000 backlog remaining after the war cutbacks, more than half is on new models, Cohu said. He expressed confidence in the plans of the army not only to devote funds for experimental and development work but to retain a certain amount of production in the aircraft industry because of the necessity of having production engineering know-how for purposes of national defense. Cohu also revealed Northrop is working on projectiles.

4 Named to Penn. Commission

Four of the five regular seats on the Pennsylvania Aeronautics Commission have been filled with the naming by Governor Martin of Senators John D. Dent (D-Westmoreland) and A. Evans Kephart (R-Philadelphia) and Representatives William R. McMillen (R-Indiana) and Charles C. Smith (R-Philadelphia). The legislators will serve without voting powers on the Commission which is headed by Floyd Chalfant, Secretary of Commerce.



Enflight and Cutaway Drawings of Republic's Transport

Martin Enters Commercial Aircraft Production Field

Model 202 is Outgrowth Of Last Year's Mercury

THE GLENN L. MARTIN CO. heralded its entry into the commercial aircraft production field last fortnight with the unveiling of a mock-up of a new twin-engined 30-42 passenger landbased transport designated as the Model 202. A prototype version is expected to be completed by August 1946, and will be followed by several additional prototypes which will be extensively tested in airline service. Delivery of production models is expected to begin early in 1947.

The 202 was described by William K. Ebel, vice-president engineering as an outgrowth of the Martin Mercury, announced last year, but the original design has been so improved and altered that to all intents and purposes it is a completely new aircraft. Basically the 202 is a twin-engined low wing, all-metal (75ST or R-301 will be used) monoplane powered by two Pratt & Whitney R-2800-c engines turning four-bladed, 13 ft. 6 in. diameter, full feathering Hamilton Standard propellers with provisions for reverse thrust aerodynamic braking as an added safety feature. It has an overall length of 71 ft. 11 in., overall height of 25 ft., span of 92 ft. 9 in., and main gear tread of 25 ft. Wing area is 860 sq. ft., wing flap area 150 sq. ft., fuselage flap area 32 sq. ft., and wing loading 39.8 lbs./sq. ft.

Weight Empty 22,000 Lbs.

Manufacturer's weight empty of the standard 30-passenger version is 22,215 lbs., and of the alternate 42-passenger version 21,865 lbs. ATA operating weights empty for the two versions are 23,410 lbs. and 22,606 lbs., which with a design gross weight of 34,300 lbs. leaves disposable loads of 10,890 lbs. and 11,694 lbs. respectively. Maximum landing weight for both versions is 33,100 lbs. The 202 will be equipped with an hydraulically operated, fully retractable tricycle landing gear with dual wheels on the main gear.

An estimated performance summary for the new aircraft lists high speed at 8,600 ft. low blower as 306 mph, cruising speed at 10,000 ft. at 70 percent meto power as 270 mph, and stalling speed as 80 mph.

Service ceiling is 29,800 ft.; one engine inoperative ceiling 16,000 ft.; take-off over 50-ft. obstacle at sea level 1,950 ft.; two engine maximum rate of climb at sea level 1,660 ft./min.; one engine inoperative take-off distance at sea level 3,750 ft.; landing over 50-ft. obstacle at sea level 3,500 ft.; and maximum range at 10,000 ft. and 60 percent normal rated power 1,130 mi.

Direct operating costs for the standard version, set up according to the ATA method, range from about 10.4c per ton mile, 10.4 miles per seat mile, and 44c per airplane mile over a 200-mile range to 14c per ton mile, 14 miles per seat mile, and 37.8c per airplane mile over a 1,000 mile range, at 60 percent Meto power. Corresponding figures for 70 percent Meto power are 10.6c per ton mile, 10.6 miles per seat mile and 44.5c per airplane mile over the shorter distance and 16.3c per ton mile, 16.3 miles per seat mile and 38.2c per airplane mile over the longer.

Block Speeds Vary

Estimated block speeds vary from 200 mph at 60 percent Meto and 213 mph at 70 percent Meto at 200 miles to 240 mph at 60 percent and 250 mph at 70 percent at 1,000 miles; while estimated payload ranges from 4.13 tons at both 60 and 70 percent Meto over 200 miles to 2.60 tons at 60 percent and 2.30 tons at 70 percent over 1,000 miles.

Similar calculations for the 42 passenger version show a minimum cost per passenger mile of 9.6 mils at 60 percent Meto over a 400 mile range. Range of the 42 passenger version with a 100 percent load factor is 300 miles at 70 percent power and 400 miles at 60 percent power.

No cost breakdown showing how these figures were arrived at is available from Martin at the present time lest it reveal the amount of its bid in the American Airlines competition for a twin engined transport. However, Martin officials stated that passenger fares of 3c a mile should be possible with the 30 passenger version and 2½c a mile with the 42 passenger version.

Among the advanced design features which will be introduced in the 202 are a new Martin low drag airfoil section which, on the basis of wind tunnel tests, not only offers low drag in normal flight but also

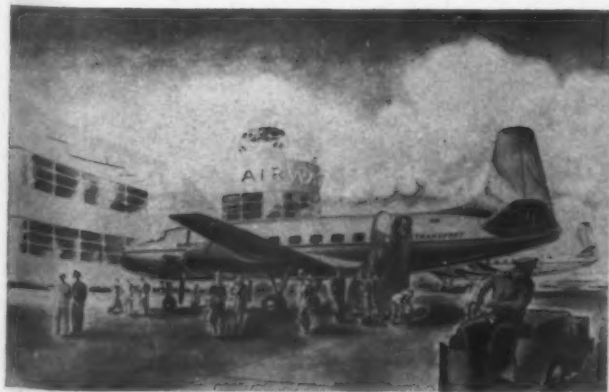


Mr. and Mrs. Tom Braniff inspect Mock-up of Martin

under such high lift conditions as flight with one engine inoperative; a new auxiliary airfoil aileron invented by William Van Zelm, chief of new design, which is about two-thirds the length of conventional types, permitting greater flap length; and a new double slotted flap with an auxiliary shutter to close the gap when the flaps are in up position. It is the combination of these three features which is expected to keep the 202's stalling speed within present CAR limits despite its high cruising speed and wing loading of 39.8 lbs./sq. ft.

In addition to the standard power plant installation which will be offered initially, Pratt & Whitney is engineering two additional installations for the 202 which will eliminate cowl flaps and incorporate an exhaust pump and Siamese stacks. These installations will weigh approximately 200-300 lbs. more per engine, but are expected to provide 7-20 mph additional speed. Water injection will also be offered optionally for all powerplant installations, and is expected to permit as 2,800 take-off horsepower for each engine. Martin officials pointed out that the 13 ft. 6 in. props on the 202 are capable of absorbing such horsepower.

Martin has also paid particular attention to cutting down ground time in its new transport. Ebel stressed, however, that no cargo or passenger handling equipment will be carried in the aircraft, but that Martin is working on special ground equipment for use with the 202.



Artists Drawings of Martin 202 Transport

Service and maintenance features incorporated in the aircraft include provisions for underwing fueling, eliminating the need for ladders and platforms, and the location of all radio, hydraulic equipment, batteries, etc., in special compartments in the underside of the fuselage which can be reached from the ground for servicing through trap doors based on the bomb bay door principle of combat aircraft. Special provisions are being incorporated for radar. Engines will be mounted on a special three-point suspension mount, to provide greater accessibility for servicing, and doors will be provided in the firewalls so that the engines can be reached through the wheel wells without removing cowlings when the landing gear is down. Forward cg is 17 percent MAC and aft cg 32 percent, with company engineers hoping that the ship will be certified for random loading. Separate large cargo hatches for both the forward and rear cargo compartments are located on the opposite side of the fuselage from the passenger entrance, and provision has been made so that porters can enter the passenger cabin through the rear cargo compartment.

Double Row Seating

In the 30-passenger version, the front cargo compartment has a volume of 240 cu. ft., and the rear 150 cu. ft. Passengers are seated in double rows of a special Martin-designed friction lock adjustable seat, the back portion of which lowers as it is moved into reclining position. Other passenger comfort and convenience items include a luggage rack near the entrance in which passengers may deposit their own bags; a combination of radiant and direct heating and ventilating using a combustion heater with a built-in fan to provide ground heating for winter operations; and extra large windows which in combination with the small wing permit good visibility despite the low wing design. The buffet and luggage racks have been designed to be interchangeable with DC-6 equipment.

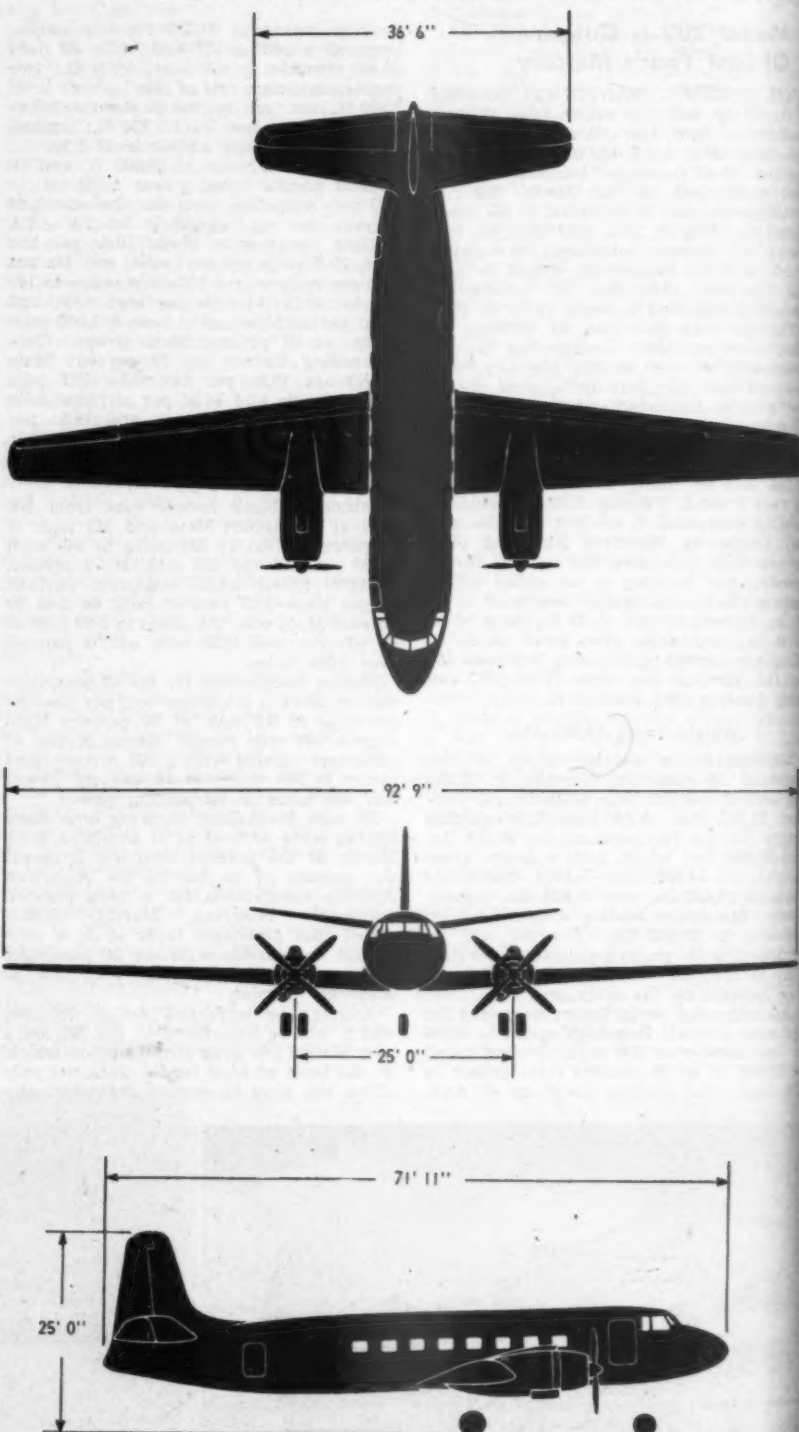
Special considerations for the pilot include rudder pedals which are adjustable to leg length, separate steering wheels for the nose gear mounted concentrically above both control wheels; an adjustable stabilizer interconnected with the flaps to maintain trim when they are lowered—this also serves to extend the cg range; and an electric tab control on the pedestal which controls both elevator and aileron tabs by means of a single switch.

Safety features on the 202 include location of all fuel tanks outboard of the nacelles, and the use of removable Mareng cell tanks which not only save weight but permit the addition of fuel capacity at will; a built-in hot air anti-icing system for wings, empennage, induction system and propellers; landing gear which retracts forward; and a double glazed, bird-proof windshield.

Left and right interchangeability is provided in both the power plant installations and in the components of the empennage. Elevators and horizontal stabilizers are interchanged from one side to the other by merely inverting the surfaces.

In addition to the 30-passenger standard version, and the 42-passenger version which eliminates the cargo compartments and buffet, and provides added luggage space under the individual seats, several in-between variations are being offered.

Three-View of Martin 202



These drawings show the exterior specifications of the Martin 202 transport. Martin stresses low-cost operation in the aircraft.

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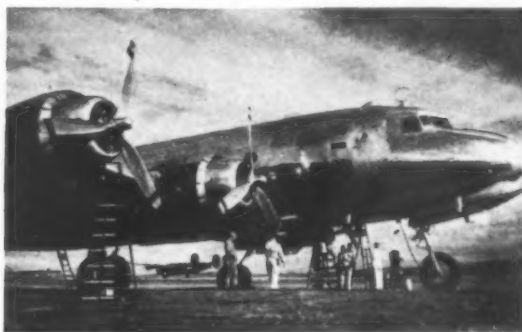
KEEN EYES...eyes trained by years of experience, guide United Air Lines-operated ATC planes to their island destinations.



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Direct Costs of Model 110 Revealed in Convair Study

Manufacturer Considering 2nd Version with R-1820s

DIRECT FLYING COSTS for Consolidated-Vultee's Model 110 30-passenger twin-engine standard version transport powered with Pratt & Whitney R-2800-C engines will range from approximately 10.4c per ton mile at 235 mile range to 13.2c per ton mile at 750 mile range, according to an estimated cost analysis compiled by Convair engineers. Payload will vary from 4.2 tons at 235 miles to 2.86 tons at 750 miles, and block speed from 213 mph at the shorter distance to 240 mph at the longer.

These calculations are based on the approved ATA method and assume maximum cruise power at 10,000 ft., 100 percent load factor, and a cruising speed of 265 mph.

Similar calculations for an alternate version powered by two Wright R-1820 engines which would have a cruising speed of 236 mph at 10,000 ft. and a ferry range with 1,240 gal. maximum fuel capacity of 3,280 statute miles at an average airspeed of 160 mph at 10,000 ft. show direct flying costs ranging from 11.1c per ton mile at 300 miles to 15.5c per ton mile at 1,000 miles. Payloads for the alternate version vary from 3.40 tons at 300 miles to 2.22 tons at 1,000 miles, and block speeds from 199 mph at the shorter distance to 219 mph at the longer.

Tentative price of the aircraft for the purpose of these calculations is set at \$166,500 less engines, with the R-2800-C engines listed at \$42,000 for two, and the R-1820s at \$28,500.

Hourly direct flying cost for the standard version is calculated to run from \$89.95 to \$91.30, and for the alternate version from \$74.45 to \$75.55. A breakdown of the non-variable hourly cost items for the two versions is as follows:

	R-2800-C	R-1820
Oil	1.73	1.20
Airplane Depreciation	7.86	7.86
Engine Depreciation	3.50	2.38
Airplane Overhaul & Repair	6.68	7.03
Engine Overhaul & Repair	7.11	4.25
Airplane & Engine		
Ground Service	7.22	7.09

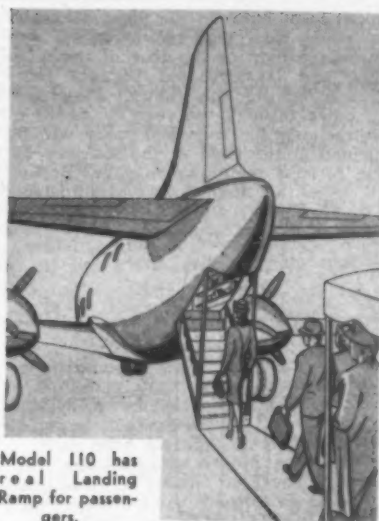
Fuel consumption for the standard version is figured at 1165 lbs./hr. and for the alternate version at 775 lbs./hr. at cruising speed, with additional allowances being made for climb and maneuvering according to ATA standards. Pilot and crew expense are likewise calculated by ATA methods and are identical for both versions, varying with the length of the trip. Insurance on the standard version is figured at \$4.11 plus .0013 times the block speed, and on the alternate version at \$3.84 plus .0013 times the block speed.

All-Metal Monoplane

In addition to the cost analysis Convair has prepared a specification on the 110 for airline distribution which reveals many further details on the new aircraft, but specifically states that all data is subject to change with the development of engineering and customer requirements.

The Model 110 is described as an all-metal low wing monoplane with full cantilever wing and tail surfaces. The fuselage will have a circular cross section, with a maximum height and width of 117 in., and will be constructed of a smooth metal skin reinforced with longitudinal stringers, transverse bulkheads and belt frames. Overall length is 71 ft. 1 in., height 26 ft. 7.3 in., span 91 ft. and main gear tread 24 ft. 10 in.

Performance estimates for normal operation at a gross weight of 32,300 lbs. with 625 gal. of fuel, and a 6,600 lb. payload made up of 30 passengers plus baggage and 600 lbs. of cargo, call for top speeds of 310 mph at 18,500 ft. and 273 mph at sea level; average cruising speed at 10,000 ft. of 265 mph; ranges of 850 miles with no wind, no reserve and no



Model 110 has real Landing Ramp for passengers.

allowance for climb, and 560 miles with 200 miles plus ¼-hr. reserve; one engine inoperative ceilings of 16,100 ft. with .02 Vso2 rate of climb, and 11,000 ft. with .04 Vso2 rate of climb; 2,270 ft. take-off distance over a 50-ft. obstacle at sea level from a paved runway; 2,000 ft. landing distance (with reversible pitch propellers) over a 50-ft. obstacle at sea level onto a paved runway; 2,900 ft. required CAR runway length for take-off; 3,120 ft. required CAR runway length for landing; stalling speed of 79 mph; service ceiling of 29,100 ft. with an 1,100 ft./min. rate of climb; and a maximum altitude of 7,200 ft. to meet CAR take-off climb.

Maximum fuel capacity is given as 1,240 gal., and maximum ferrying range at 168 mph. at 10,000 ft. with no payload as 3,000 miles.

Use Four-Blade Props

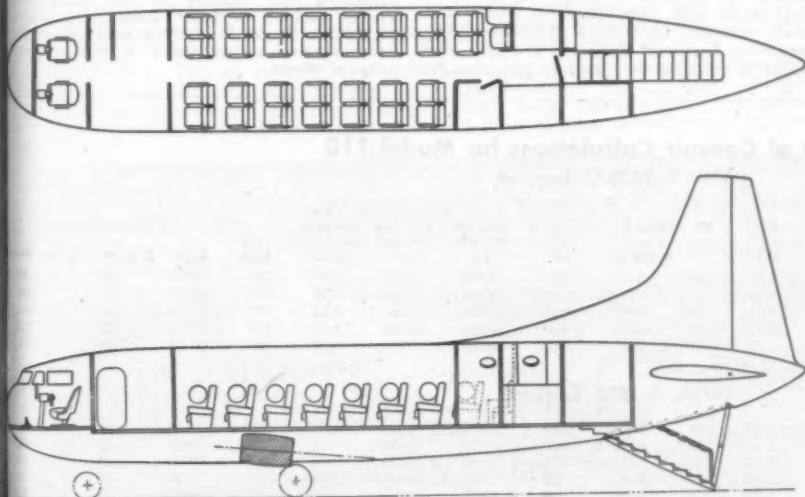
Wing loading of the 110 at 32,300-lbs. is 39.8 lbs./sq. ft. and power loading 7.7 lbs./BHP. In the gross weight condition the cg can range from 20 percent MAC in its forward position to 33 percent MAC aft.

Hamilton Standard 4-bladed full feathering reversible pitch propellers 12 ft. 2 in. in diameter will be offered as standard equipment. Propeller clearances are 12 in. from the ground and 17.5 in. from the fuselage.

Externally the 110 will be completely flush riveted. The wing comprises a center section incorporating the two nacelles and integral fuel tanks on either side of each nacelle, two detachable outer wing panels and tip sections. Ailerons will be of metal construction fabric covered, with one irreversible trailing edge tab installed in each aileron. All metal hydraulically actuated flaps of the Fowler type will be installed between the fuselage and inboard end of the ailerons. Rudder and elevators will be fabric covered and aerodynamically balanced, and will incorporate irreversible trailing edge tabs.

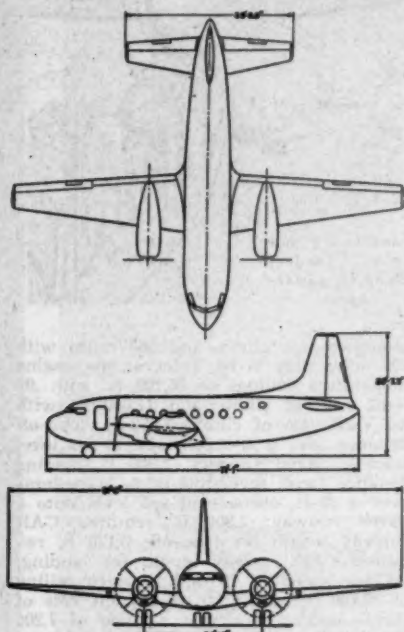
Dual flight controls will be of the wheel and swinging pedal type, and the rudder pedals will be adjustable to pilot leg length and support independently adjustable brake pedals. Trim tab controls will be mechanical and accessible to both pilots.

The fuselage of the 110 will be divided into a flight deck, an express and radio



Passenger Seating Arrangement in Model 110

compartment between the flight deck and the main passenger cabin, galley and steward position at the rear of the main cabin, and lavatory and baggage compartment aft of the galley. Passengers will enter through the rear by means of a retractable stairway, and space will be provided at the head of the stairway for them to stow their own luggage. Seating will be in two double rows of adjustable



Three Views of Model 110

seats, and polaroid windows are planned for added passenger comfort. Heat for anti-icing will be provided by primary and secondary heat exchangers, and heat for the passenger cabin will be supplied by lead-off ducts from the secondary exchangers, with a control located convenient to the Stewardess.

The landing gear will be of fully retractable tricycle type with dual wheels throughout, and will be hydraulically actuated. The main gear will retract into the nacelles and incorporate wheel well doors to provide a faired contour. Cowlings adjacent to the engine will be of cantilever type construction so that the nacelle cowling and engine are independent.



New Martin Tandem Gear Installed on Experimental B-26 Marauder.

Martin Develops 'Tandem Gear'; Wheels Are Set Bicycle Fashion in Fuselage

A new type landing gear in which the main wheels are set bicycle fashion in the fuselage instead of under each wing as in the conventional tricycle gear was revealed to an AMERICAN AVIATION representative this week by the Glenn L. Martin Co.

Known as a tandem gear, the new wheel arrangement has been under development for the past several months, and has been subjected to extensive experimental testing on a B-26 Marauder christened "The Middle River Stump Jumper" by Martin employees. Flight tests have been conducted by both Martin test pilots and representatives of the Air Technical Service Command, and the company reports that the test aircraft will soon be stationed permanently at Wright Field.

In addition to the two main bicycle wheels which absorb landing and take-off loads, the "Stump Jumper" has two smaller wheels which retract into the nacelles and are used to facilitate taxiing. In the original installation short struts similar to seaplane float struts were used for these auxiliary wheels, causing the aircraft to waddle like a duck, but on the latest installation these struts have been lengthened and the wing gear revised to maintain a level attitude on the ground.

While no information is available as to potential applications of the new gear, it would appear to be an answer to the retraction problem posed by large jet aircraft with thin laminar flow wings and small nacelles (AMERICAN AVIATION "Engineering Preview" July 1). It could also result in considerable landing gear weight

reduction for conventionally powered aircraft, the fuselage location permitting shorter main gear struts, and may well provide the answer to some of the biggest obstacles confronting high wing commercial transport designs, not only by reducing weight, but also by increasing the safety factor in the event of forced landings.

Vets Get High Priority For Surplus Purchases

Two amendments to existing regulations issued by the Surplus Property Board make it possible for returned war veterans to purchase airplanes and related parts from Government surpluses on a Federal Agency No. 1 priority.

The veteran is permitted to purchase one airplane from surplus with no cost limitation, regardless of whether he has already bought or plans to buy other surplus items up to the \$2,500 limit established in SPB Regulation No. 7. However, the plane must be used essentially for the establishment of a business, such as shuttle transportation, flying school, special licensed transport service, etc., and for personal or private use.

Col. Brest With Riddle

Lt. Col. Alexander Brest, AAF, now on terminal leave after serving as director of operations and training at the Army Air Forces aviation engineer school and training center, Gieger Field, Wash. has joined the administrative staff of the J. P. Riddle Company of Miami.

Summary of Convair Calculations for Model 110 (With R-2800-C Engines)

Trip Length St. Miles	Operating Fixed Wt. Lb.	Res. Fuel Lb.	Ave. Cruise Airspeed Mph	Fuel Req'd For Trip Lb.	Pay-load Lb.	Pay-load Tons	No. Pass.	Pass & Bagg. @ 200 Lb.	Cargo & Mail Lb.	Take-off Weight Lb.	Landing Weight Lb.	Time (10 Mph Headwind) Hrs.	Vb Mph	Direct Flying Cost		
														\$/Hr.	\$/St. Mi.	\$/Ton-Mile
200	21950	960	264	1150	8060	4.04	30	6000	2080	32140	30990	0.97	206	89.95	.44	.106
300	21950	960	264	1600	7790	3.90	30	6000	1790	32300	30700	1.36	221	90.55	.41	.106
400	21950	960	265	2060	7330	3.66	30	6000	1330	32300	30240	1.75	229	91.00	.40	.106
600	21950	960	265	2970	6420	3.21	30	6000	420	32300	29330	2.53	237	91.20	.39	.126
800	21950	960	266	3880	5510	2.76	27	5400	110	32300	28420	3.31	241	91.30	.38	.137

(With R-1820 Engines)

Trip Length St. Miles	Operating Fixed Wt. Lb.	Res. Fuel Lb.	Ave. Cruise Airspeed Mph	Fuel Req'd For Trip Lb.	Pay-load Lb.	Pay-load Tons	No. Pass.	Pass & Bagg. @ 200 Lb.	Cargo & Mail Lb.	Take-off Weight Lb.	Landing Weight Lb.	Time (10 Mph Headwind) Hrs.	Vb Mph	\$/Hr.	\$/St. Mi.	\$/Ton-Mile
200	19040	750	236	880	7150	3.58	30	6000	1150	27800	26940	1.07	187	74.45	.40	.111
300	19040	750	236	1200	6810	3.40	30	6000	810	27800	26600	1.51	190	74.85	.38	.111
400	19040	750	237	1540	6470	3.24	30	6000	470	27800	26280	1.94	206	75.05	.36	.112
600	19040	750	237	2220	5790	2.90	28	5600	190	27800	25580	2.82	212	75.20	.35	.122
800	19040	750	238	2890	5120	2.56	25	5000	120	27800	24910	3.69	217	75.35	.35	.135
1000	19040	750	238	3570	4440	2.22	22	4400	40	27800	24230	4.57	219	75.45	.34	.155
1200	19040	750	238	4250	3760	1.88	18	3600	160	27800	23550	5.44	221	75.55	.34	.162

Douglas Globemaster Given Flight Tests

The Douglas C-74 Globemaster—military version of the DC-7—was test flown at the Long Beach Municipal Airport, September 5 with Ben O. Howard, famous engineering test pilot, at the controls. Howard kept the 77-ton craft aloft for an hour and a half.

On the theory presumably that if it would taxi it would fly, Howard lost no time in taxi tests, rolled out onto the runway as though he were piloting an airliner on schedule and took off. He lifted the big aircraft into the air easily, using only a little more than half of the runway in a crosswind take-off. Leisurely he lifted his gear and then swung around to buzz the field at a low altitude before going aloft. Howard had 2,000 gallons of gas aboard.

Acting as co-pilot for test pilot Howard was John Martin, veteran Douglas pilot. Jack I. Grant was flight engineer and Christian B. Nielsen was flight inspector.

Howard was obviously pleased with the performance of the plane. After landing he said it flew with characteristic ease.

The C-74, which is described as the world's largest land aircraft, is designed as a cargo carrier. Its speed is given at more than 300 miles per hour, its maximum range at 7800 miles and its useful load at 30 tons. It also can be equipped with bucket seats for 125 troops. As an ambulance plane it can accommodate 115 litter cases.

Army Version of SC-7

Called the Globemaster, the C-74 is the Army version of the DC-7 which is now on commercial order. It is a four-engine transport with a wing span of 173 feet and it is 124 feet long. Its height is 43 feet and its overload gross weight is 155,000 pounds.

The Globemaster's fuel capacity is 11,000 gallons which is more fuel than is contained in a standard railroad tank car. Its oil capacity is 340 gallons.

The plane has two cargo compartments—a main compartment with a capacity of 6500 cubic feet and a belly compartment with a capacity of 615 cubic feet. Together these cargo compartments have nearly twice the cubic footage of a standard railroad box car.

Technically, the C-74 is a low-wing monoplane with tricycle landing gear. It is powered by four 28 cylinder Pratt and Whitney Wasp Major R-4360 engines and uses either four-bladed Curtiss or three-bladed Hamilton Standard reversible propellers.

U. S. Air Priorities To Be Abolished Oct. 15

Priorities on all domestic commercial airlines will be abolished Oct. 15. Under a new system going into effect Sept. 15 the volume of airplane priorities will be reduced from 100,000 to 15,000 a month or less. This reduction will be effected by abolition of priorities to military and naval personnel in certain categories of furlough and leave of absence, by fewer military requirements for expedited official travel, and by stringent screening of all requests. During the period from Sept. 15 to Oct. 15 a single class of priorities will replace the present four classes. Concurrently with abandonment, controls likewise will be discontinued on civil airlines to South and Central America, and to Alaska. It is expected that existing military services paralleling civil lines will accommodate urgent military travel. Priority controls on civil transatlantic and transpacific services will be continued for the present.



Three-view of DC-7

With the reversible propellers it can taxi backwards as well as forwards. It can even back into its hangar.

The fuselage is of stressed skin and stringer construction. The two-spar wing utilizes longitudinal hat sections to stiffen the exterior skin. Six integral type fuel tanks are built in the wing and extend outward to the point where the outer wing panels are attached.

The empennage is a single tail having stressed skin and stringer for horizontal and vertical stabilizers and fabric covered rudders and elevators.

A unique feature is the separate enclosed blisters or "bug-eyes," as Douglas terms them, which enable both pilot and co-pilot to have 260 degree visibility and

yet reduce the ship's drag and weight to a minimum.

Full-span flaps are embodied in the design to reduce landing speed and landing and take-off run.

Both cabin and flight personnel quarters are automatically heated and ventilated and keep the interior at constant temperature regardless of the outside air.

The flight deck directly aft of the pilot's compartment provides stations for the flight engineer, radio operator and navigator. A galley and crew lavatory are also located here. Directly below is a compartment for a relief crew and sleeping accommodations for six.

Thermal anti-icing is used to protect the wing and also the empennage. Walkways in the wings permit servicing engines in flight.

The C-74 is equipped with hoisting facilities to load and unload its own cargo. Two traveling cranes are supported on overhead rails in the roof of the fuselage and can be operated together or independently. A stationary hoist is located forward at the cargo loading door on the left side of the cargo cabin.

Has Hoisting Facilities

The C-74's freight elevator is a section of the main cabin floor which can be lowered to the ground and raised by the traveling crane equipment.

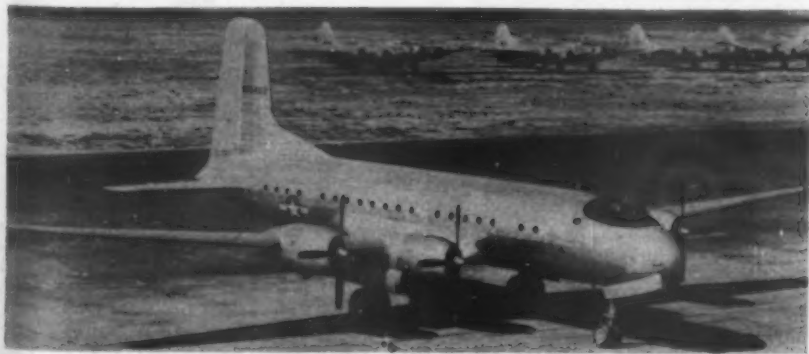
The commercial version of the C-74—the DC-7—will have a gross weight of 162,000 pounds instead of the 155,000 pounds in the Army version. The DC-7 will carry 108 passengers and a crew of 13. It will have two cabins—one accommodating 72 passengers and the other 36—a modern galley for serving full-course meals aloft, dressing rooms and cargo compartments.

A second C-74 is now nearing completion at Douglas, Long Beach plant.

Cabot in Paris to Revive International Air Federation

Godfrey Lowell Cabot, 74, identified with aeronautics even before the first heavier-than-air craft flew in 1903, is now in Paris to revive the International Air Federation (Federation Aeronautique Internationale) of which he is president. Late in August he flew the Atlantic with Pan American Airways. It was his 44th trans-Atlantic crossing but his first by air.

Mr. Cabot was for a number of years president of the National Aeronautic Association, the U. S. member of the FAI and has been governor at large of the association since 1924. The FAI of which he was senior vice president at the start of the war, is made up of some 40 aeronautic organizations throughout the world and is the official body for recording air records.



Ground View of Douglas Globemaster

Poetic, eh wot?

Eric Bramley, AMERICAN AVIATION's roving executive editor, writes the following from Nanning, China:

Conservative airline pilots who taxi their planes to the end of the runway and call the tower for take-off clearance in normal radio language would be shocked to hear how the hard-flying pilots of Combat Cargo Task Force go through the same routine.

At Nanning recently, a Com Car pilot called the tower.

"Gimme the word and I'll make like a bird," he said.

"You've got the nod, get off the sod," back came the answer.

225 Surplus C-54s For Sale During Remainder of Year

As many as 225 four-engined Douglas C-54 transports will be available for sale as surplus aircraft from the Army during the remainder of this year, according to reliable reports, and upwards of 200 will be available in 1946.

Twenty C-54Es have already been allocated to U. S. foreign flag carriers, and about the same number of C-54s, the basic first model of the type, will also be made available in the near future. In addition quite a group of C-54As and C-54Bs are to be sold as surplus, and it is reported that foreign airlines will have an early chance at buying some of them. Aside from the twenty C-54Es already allocated, all other C-54 models available this year are expected to be the A and B models.

A price of \$200,000 per plane with 50% allowance for conversion is understood to have been established for C-54s, and \$300,000 each for other and later models. A leasing arrangement similar to that in force for the DC-3 can be made by buyers with options to buy within five years.

Both government and industry are hastening completion of surplus arrangements since many buyers are waiting to determine if surplus aircraft are cheaper than new ones.

Surplus Property Board, in its allocation of Sept. 6, awarded six C-54Es to American Export, eight to Pan American and six to Transcontinental and Western Air. The C-54s are readily convertible to airline transports.

The allocations were made on the basis

Durand Retires From NACA

Dr. William F. Durand, one of the original members of the National Advisory Committee for Aeronautics appointed by President Wilson in 1915, has resigned from NACA and returned to retirement at the age of 86. He was chairman of NACA during World War I, retired in 1933, and was recalled by President Roosevelt in 1941. He organized and directed the Special Committee on Jet Propulsion which is credited with much success in research and development in that field.

B-23 Medium Bombers Being Converted Into 'Flying Offices' at Hughes Plant

On the theory that many business firms will make use of executive transport planes, Hughes Aircraft Co. has begun the conversion of medium bombers into "flying offices," at its Culver City plant.

For this purpose, Hughes is using twin-engine Douglas B-23 bombers purchased from surplus war stocks. In addition it foresees a possible market for converted four-engine B-17 Flying Fortresses, especially in the Hollywood motion picture colony with which Howard Hughes is actively identified and where high operating costs might be of secondary consideration.

The first converted bomber has been completed and has been delivered to the Hughes Tool Co. for use by officials of the parent organization in Houston, Tex. A second ship is now being converted to the same design for use by Hughes Aircraft.

Others who have ordered converted executive ships are the United Drug Co., General Motors Corp., Gar Wood Industries, Inc., and Henry J. Kaiser.

Two bombers are being converted for the Gar Wood Industries. Upholstered and furnished to the customer's specifica-

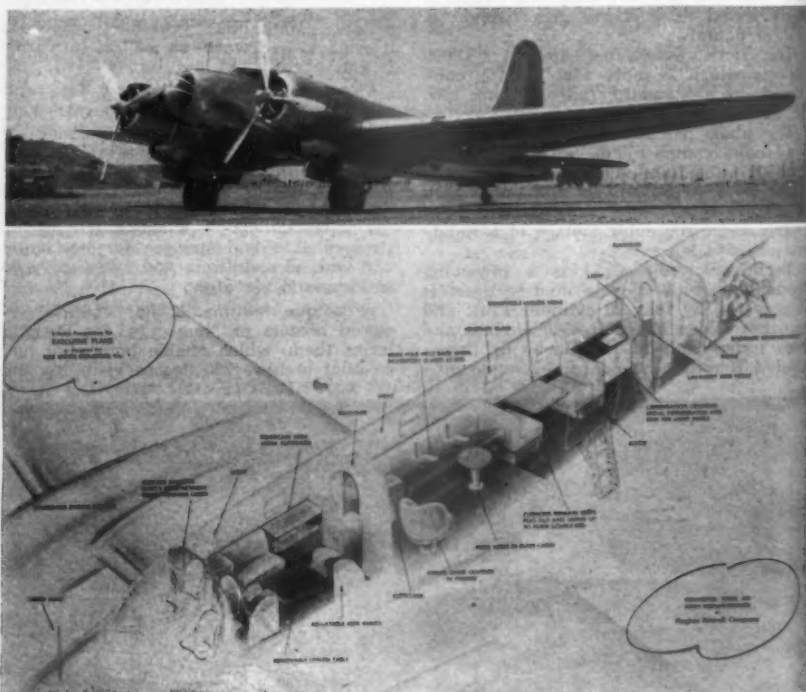
tions, these planes are to be finished in a gray, navy and oak combination. Deep napped rugs of gray curled mohair and gray gabardine head linings provide a background for navy bedford cord sidewalls while bookcases and panelling will be of oak. The furniture is to consist of pigskin arm chairs of modern lines, fold-away tables and movable lounge chairs that can be made up into beds. The windows will be shaded by white venetian blinds with blue webbing. The galley will consist of a combination cook stove, sink and refrigerator.

In converting a twin-engine bomber, Hughes Aircraft seals up the bomb-bay doors and cuts windows out of the sidewalls at eye level. The plane is given a factory overhauling job on engines, instruments, propellers, airframe and accessories and all the old fabric coverings of ailerons, tabs and flaps are replaced with new material. New radio, heating and ventilating systems are installed.

Lightweight Duramold flooring is installed in the main cabin and the walls are sound-proofed with fireproof spun glass material. Cabin interiors are modeled to accommodate from 8 to 12 persons, depending upon the requirements of the purchaser.

According to Hugh McL. Fenwick, general sales manager for Hughes, it takes approximately two months to convert a medium bomber into a "flying office."

The remodeled B-23's cruise at about 240 mph. and have a range of 1,600 miles.



The B-23 medium bomber, shown at top, is now a "Flying Office" for the Hughes Tool Co., following its conversion at Hughes Aircraft Plant. Bottom photo shows cabin design for B-23 conversion into an executive plane for Garwood Industries.

Brickbats Fly as Minnesota Group and CAA Officials Tangle Over Regulation

All isn't just sweetness and light between some of the state aviation officials and the federal Civil Aeronautics Administration.

In fact some pretty hefty brickbats are being thrown around and there aren't any signs that the tossing is going to stop very soon.

The latest episode occurred in the Twin Cities when a CAA representative talked to a state aviation group and got so miffed that he picked up his hat and left, stating that he was sorry he had ever gone to Minnesota. And the Minnesotans, up in that part of the country where federalists had better carry guns, haven't made any secret of their desires that the CAA man might just as well never come back.

The CAA man is E. J. Robbins, member of the Nebraska Aeronautics Commission in 1939 and its chairman the following year. He joined the CAA as facility security officer in 1943 and is now assistant to the Administrator for state relations.

On the other side of the ring is L. L. Schroeder, Minnesota's commissioner of aeronautics, who, like many another state aviation official, is not beyond speaking his mind and reminding the world and the U. S. in particular that there are 48 states in the Union.

Following Mr. Robbins' hasty exit from Minnesota, Mr. Schroeder has written a letter. Mr. Schroeder's letters have never been noted for brevity, but on the other hand they are never dull. This new one was written to Sheldon B. Steers, of the Michigan Department of Aeronautics, who is president of the National Association of State Aviation Officials. Copies went to other state aviation officials.

It seems that Mr. Robbins and a CAA group went to the Twin Cities to meet with the Minnesota aeronautics commission.

"Since I do not have a commission," Mr. Schroeder writes, "and since Mr. Robbins and the other men quite obviously did not wish to meet with me, I arranged to have the chairmen of our aviation committees in the House and Senate, other members of the aviation committee of the Senate, the Governor, and the Governor's secretary sit in on the meeting. I regret to say that the meeting could not be considered very successful."

What got under Mr. Schroeder's skin, apparently, was when Mr. Robbins called him incompetent as an aviation official. Them's fightin' words in Minnesota. But let Mr. Schroeder tell his story:

"1. At lunch Mr. Robbins spoke urgently against the states entering into economic regulation. He used as an example the case of a man in Utah who was flying an intra-state operation handling passengers and International Harvester parts. Apparently, the state attempted some economic regulation with the result that this man suspended operation stating that he could not afford to pay the \$125 a week that the state regulations cost him in reports. Mr. Robbins further pointed out that the parts that he was delivering were inter-state commerce and that consequently, the operation was not intra-state. I thereupon asked Mr. Robbins how this man could obtain a certificate of

convenience and necessity from the CAB to continue such an operation and pointed out the lack of air service in our state. Mr. Robbins refused to answer the question in any form although it was put to him repeatedly.

"2. At the meeting in the Governor's office, Mr. Robbins spent the first 25 minutes telling the assembled group of the wonders of aviation and urged that the state do everything possible to acquaint its people with this remarkable development. He repeated in somewhat glowing terms all of the shopworn predictions about the number of aircraft which will be manufactured and sold within the next few years.

"3. Mr. Robbins then spoke of the Civil Aeronautics Administration and its tremendous organization with over 11,000 employees and of the services it is prepared to render in the field of aviation to the states and the municipalities. He stated that in his travels he has found that municipalities had set aside millions of dollars for airport construction. He spoke of the cooperation that the CAA was willing to offer to the states and specifically of the spheres of authority between the states and the CAA.

"4. He then spoke specifically of the sections in our law which require the registration of aircraft and which provide that we might, if necessary, exercise the authority to register federal airman certificates. He stated that this was a field in which the federal government was operating and that the states should stay out of it. Thereupon, Representative Vernon Welch and Assistant Attorney General Mr. Green questioned Mr. Robbins extensively on the matter of federal airman certificates and airworthiness certificates and the right of the state to ground an airman or an airplane for violation of the state laws which have no relation to the man's competency or to the aircraft's airworthiness. Mr. Robbins made the response that once the aircraft had been certified as airworthy and once the airman had been certified as competent by the federal government, no power on earth could stop him from flying, and that even the CAA could only suspend the airman certificate for a period of thirty days. Mr. Green mentioned the uniform code which was prepared by NASAO. Mr. Robbins stated that Burgess and the representatives at Oklahoma City had no authority to act for the CAA and that they repudiated any part in the operation of the NASAO uniform code.

"Mr. Robbins referred to the meeting which we had recently in Cincinnati with Mr. Burgess and stated that an agreement had been reached at that meeting between the NASAO



'Shorty' Honored—The Distinguished Flying Cross—the nation's highest flying honor—was presented Major Rudolph W. "Shorty" Schroeder, famed Army Air Corps pioneer, at a testimonial dinner in his honor in Chicago. Lt. Gen. Harold L. George, commanding general of the Air Transport Command, made the presentation as other high Army Air Forces officials and many long-time friends of Major Schroeder's looked on.

and the CAA on the points involved, and that Minnesota was the only state that was refusing to cooperate. This resulted in a sharp exchange of words between Mr. Robbins and Representative Welch and Mr. Green, followed by a statement from Mr. Robbins in which he inferred that I was incompetent and that I was not a properly qualified director of aviation for the state, since I had made the statement during the luncheon meeting that the crest of public enthusiasm for aviation had been passed, and that I had consistently refused to cooperate with federal authorities. Whereupon, he picked up his hat and left, stating that he was sorry he had ever come to Minnesota.

"It was unfortunate, of course, that Mr. Robbins came here attempting to sell our well-informed group of people in this state (a) the glories of aviation, (b) the wonderful services that the gigantic CAA administration was prepared to offer, and (c) the proposition of absolute federal control. He could have accomplished a great deal more if he would have been willing to discuss the debatable points on their merits instead of avoiding the question and charging lack of cooperation and incompetence."

HP of Allison Upped with Triptane Blends

As much as 2,700 hp has been obtained from a liquid-cooled Allison V-1710 engine, normally rated at considerably under 2,000 hp with present fuels, through the use of Triptane blends, AMERICAN AVIATION learned last week. While no details as to the per cent of Triptane used were available, it was rumored that the blend had a rating of 165 octane or better as against about 130 octane for this country's most recently announced super aviation fuel. Pure Triptane has a rating of 450 octane or better.

The tests of the new super fuel in the V-1710 engine were conducted by the Allison Division of General Motors Corp. This division recently acquired a Douglas B-23 bomber which is being converted into a 12-passenger executive aircraft, and in which V-1710 engines are being installed. It is understood this aircraft will be used to demonstrate the commercial advantages of liquid cooled engines, but it is quite possible that it will also be used for Triptane experiments, particularly as this may be the factor that will weigh most heavily in airline consideration of liquid cooled engines.

At the same time AMERICAN AVIATION learned that the advantages of water injection, most generally associated with air cooled radials, are as great or greater with liquid cooled types.

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WHETHER reconversion of your plant to peacetime production is sudden or gradual, one of your first chores will have to be the rustproofing and processing of Government-owned machinery, tools and other production equipment scheduled to go into storage. This must be done, *with minimum delay*, in accordance with Ordnance

Instruction P.S. 300-4.

A stock of suitable Texaco rustproofing products on hand will greatly facilitate your compliance with this requirement, and speed your change-over to civilian production.

Texaco rustproofing products meet Ordnance specifications, and are easily applied by brush, dip or spray. The

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WITH JAMES MELTON
EVERY SUNDAY NIGHT
— CBS



TEXACO

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1. Upon termination of war contracts, Government-owned production equipment must be rustproofed promptly, in accordance with official instructions.

2. Ordnance Specification P.S. 300-4 contains official instructions for the complete processing of such equipment.

3. These instructions require that only rustproofing materials meeting Government specifications be used.

4. Texaco rustproofing products meet Ordnance specifications for application on Government-owned equipment.

protective coating they provide will assure preservation for years.

Whatever your rustproofing requirements, a Texaco representative can render helpful service. Get in touch with the nearest of more than 2300 Texaco distributing plants in the 48 States, or write to The Texas Company, 135 East 42nd Street, New York 17, N.Y.

Rustproofing Products

U.S. Airlines Are Expanding Veteran Training Programs

Hope to Effect Smooth Transition to Civil Jobs

THE NATION'S AIRLINES, preparing for the return of demobilized and job-seeking servicemen, are looking to intensified training programs as a means of effecting a smooth transition back to civil life for re-instated and newly-employed veterans.

There is reason to believe that thousands of ex-servicemen, particularly from the military's air arms, will seek employment with the civil air carriers. The latter appear optimistic over their capability to absorb many of the expected applicants and to make good use of the vast experience and training they will bring with them.

American Airlines, for example, expects to employ hundreds of technicians in its airfreight division alone. On the basis of questionnaires and letters, the company reports that 96% of its employees now in the service are eager to return. About 45% of these have acquired additional skills. Several hundred servicemen, not former employees, have applied for jobs.

An informal survey of the airlines made by AMERICAN AVIATION discloses that expanded training programs for the homecoming veteran are receiving close attention. Without exception, the carriers will offer him an introductory reorientation and indoctrination course, bringing him up to date on changes in procedures and methods, as well as to familiarize him with the company. From this point, the training becomes more specialized as he is channeled into some particular phase of the airline business. A wide variety of studies is offered.

Delta Air Lines plans to expand its training program and is now organizing a four-year apprentice school for maintenance, "on the job" training with some night classes designed to develop crew chiefs and inspectors. Briefer courses for those wishing to specialize, in engine overhaul, for instance, will be started. Operations will have a one or two year "on the job" school.

American Export Airlines is about to initiate for veterans a full time apprentice mechanic training program, encompassing a four-year period. Through this program, approved by the New York Board of Education, an apprentice may become a first-class mechanic. In-plant training is being reestablished and the company is now engaged in setting up an overseas training program for foreign station personnel. This will stress dispatching and scheduling. Other programs are under way for navigators and other flight men.

TWA, for sometime, has had an extensive training program. Its courses cover supervisory, purchasing, ground service and sales, maintenance familiarization, and engineering, among other educational services. Considerable attention is being given flight engineers since the return of the Stratoliners to service.

At United Air Lines, too, four-engined

equipment focuses increased effort on mechanic's instruction. The company's mechanics' instructors are studying the C-54 and will work with the Educational Service Department in setting up a training program for servicing new transports.

At Northwest Airlines, the following categories of training are representative of the type of activity that will be projected and amplified: flight mechanic, pilot, equipment serviceman, traffic, transportation, mechanical, supervisory.

Continental Air Lines anticipates, but does not yet have, a formalized training program. The company's first emphasis will be placed on service personnel classified as flight service agents in the flight service department. After this, it will emphasize training of mechanics. Next will come programs for other classes such as radio and teletype operators, pilots, stenographic and clerical.

Mid-Continent Airlines is considering special training programs. Until now, "on the job" training, except for hostesses and flight personnel, has sufficed. Recently introduced was a modified group training program for reservations and ticket counter people. It is expected that group programs will be extended to include most classifications.

American Aviation's Editor Wins Award

Wayne W. Parrish, editor and publisher of American Aviation Publications, and James J. Streb, aviation editor of the Associated Press, placed first respectively in the magazine and newspaper sections of the eighth annual TWA aviation writing and photographic competition. The photographic award went to A. Aubrey

Gloomy Outlook

Not one of the 300,000 pilots trained in this war is equipped to step into a commercial flying job, according to Calvin Y. Dyer, a \$15,000 a year captain with Pan American Airways.

Writing in the October issue of *Pageant* magazine, Dyer said military pilots have to return to ground school and learn to fly all over again if they desire commercial transport pilot work.

"Even the pilot of a B-29 would hardly know how to get a passenger transport off the ground," Dyer said. A Navy Air Force veteran, Dyer said he was grounded for 10 months when he entered commercial aviation. Then followed three years as a junior officer. He said that not until four years and 4500 air hours after he left the Navy was he allowed to sit for the 46 written examinations that qualified him as a transatlantic pilot.

Bodine, Baltimore Sun photographer.

Streb was chosen winner in the newspaper, open class, division for 1944, while Parrish won first place for the second consecutive year for his weekly column published in *Liberty* magazine. Albert I. Prince of the Hartford, Conn., Times was declared winner among newspapers under 100,000 circulation. The \$250 and \$150 awards, as well as commemorative plaques, will be made at a dinner in New York in September. The annual TWA rotating trophies will go to their publications for the next year.

Other winners included: Robert Mounier, *New York Sun*; Ralph Watts, *Detroit News*; John Paul Andrews, *Air News*; Merlin H. Mickel, *Aviation News*; William W. Dyviniak, Buffalo, N. Y., *Courier Express*; Fred H. Powers, *Democrat Chronicle*, Rochester, N. Y.; Nick Moser, Reading, Pa., *Eagle*; and Herbert A. Shaw, Jr., Dayton, O., *Daily News*.

New Airmail Pay Lineup

A tabulation of domestic airmail loads and payments compiled by AMERICAN AVIATION from CAB records since the new 45c per ton-mile rate went into effect for American, United and Eastern, shows a wide variation in rates of pay in relation to mail carried. The line-up as currently effective follows:

	Average Mail Load per Revenue Mile		Mail Payment per Ton Mile	
	1944	Jan.-Apr. 1945	1944	Jan.-Apr. 1945
United	1,213.3 lbs.	1,216.9 lbs.	\$.60	\$.45
TWA	873.5	1,040.4	.60	.45*
Eastern	705.3	544.9	.60	.45
Northwest	660.7	526.6	.60	.60
American	645.8	531.9	.60	.45
Delta	593.6	531.2	.60	.60
Western	541.5	535.7	.60	.60
Braniff	420.4	308.1	.60	.60
C & S	327.3	271.5	.60	.60
PCA	233.6	182.2	.60	.60
National	223.0	244.3	.66	.62
Mid-Cont.	213.2	185.2	3.71	3.66
Continental ..	107.6	106.1	5.10†	3.95
All Amer. Av. ..	99.1	97.7	9.30	8.90
Colonial	94.2	102.4	2.74	1.90
Northeast	65.6	52.1	9.46	9.75
Inland	65.9	73.9	11.24	9.92

*45c rate not yet accepted by TWA.

†Changed May 1, 1944

Jan.-Apr. ... \$6.77

May-Dec. ... 3.81

PICAO, CINA Favor Revising Technical Annexes

But Permanent Convention May Scrap Both Agencies

By FRANK M. HOLZ

TWO inter-governmental aviation organizations simultaneously have considered revision of technical annexes to the Convention documents which set up the respective groups. One is the Provisional International Civil Aviation Organization (PICAO), which met in Montreal, and the other is the International Commission for Air Navigation (CINA), which recently held its first meeting since 1939 in London.

Reflecting general acceptance of the Chicago Conference as the guide for world aviation was CINA's action in revising its own regulations to conform "to the greatest possible extent" to those adopted at Chicago last December 7. A CINA "operating subcommission" drew up recommendations for review by the CINA plenary sessions in London. But PICAO Council committees also studied the CINA report in connection with their own review of the Chicago annexes.

The suggestions of PICAO member states and of the CINA subcommission were coordinated by Commander Paul Smith of the U. S. Coast and Geodetic Survey, technical adviser to the U. S. delegation to PICAO. The recommendations were allocated among PICAO subcommittees to be worked out in detail. A continuous operating link between the two international organizations is provided by Albert Roper, who is secretary-general of both the PICAO Council and CINA. He was elected to the PICAO office while attending the CINA meeting in London and, upon adjournment, immediately flew to Montreal to assume the same duties for PICAO.

When enough nations ratify the Convention on International Civil Aviation (the so-called "permanent Convention") adopted at Chicago, an International Civil Aviation Organization is to become operative. The State Department points out that each member nation of this new organization which is also a member of CINA will "denounce" the Paris International Air Convention of October 13, 1919, by which CINA was created. This means that CINA will become a matter of history and the Chicago Convention of December 7, 1944, will be the ruling document in international aviation. PICAO, by the terms of its creation, will also be dissolved when the permanent Convention "comes into force."

The United States signed the Paris Convention but, since it did not ratify the Versailles Peace Treaty of which the Convention is a part, this country is not a member of CINA. However, the U. S. and other non-members have attended sessions by invitation and have adhered to most, if not all, of CINA's technical regulations.

The permanent Convention was forwarded to the Capitol in March by the late President Roosevelt for Senate ratification. It is now under consideration by the Senate Committee on Foreign Relations, of which Tom Connally, Texas, is chairman.



PICAO's first plenary session was held in Montreal. This photo shows the organization's delegates sitting in public session.

This document does not include either the Two-Freedoms or the Five-Freedoms. These air freedoms are established by separate Transit and Transport Agreements also drawn up at Chicago last winter.

John C. Cooper, executive secretary of the International Air Transport Association (IATA) pledged the support of his organization before a plenary session of the PICAO Council. IATA, created at Habana last April 19, is an association of international airline operators. The International Air Traffic Association, an older airline group, is scheduled to meet in London September 17 to dissolve itself and turn over its records to IATA.

Airlines and the aviation public look forward to the day of one governmental and one operator group, instead of the overlapping bodies in existence today.

The reconvening of the PICAO Council, now in recess, will coincide in time and place with the first general meeting of IATA since it was set up at Habana. Both organizations will meet on October 15 in Montreal.

Meanwhile, spade-work of the PICAO Council will be carried on by the Secretariat and various Council committees. Soon after adjournment, PICAO Council President Warner appointed temporary chairmen for two of the three statutory committees.

F. H. Copes van Hasselt, Netherlands delegate, heads the Air Transport Committee, which is responsible for studies of tariffs, subsidies, traffic demands, costs of operation, airline organization and control, and other economic matters.

A. R. McComb, Australian delegate, was similarly named temporary chairman of

PICAO Budget and Salaries

The PICAO temporary finance committee, under the chairmanship of Sir Gurunath Bewoor of India, adopted a total annual budget of \$997,180 and assessed the costs among the member nations according to a point system.

The United States and Great Britain were each assigned the maximum of 30 points, which carry an annual assessment of \$119,160. The next grouping dropped all the way to 15 points each for Canada, China, and France, or individual charges of \$59,580. Australia, Brazil, India, and the Netherlands each rated ten points or \$39,720.

The smallest contribution, one point or \$9,972, was levied on Afghanistan, El Salvador, Haiti, Iceland, Lebanon, Liberia, Luxembourg, and Paraguay.

Costs were distributed among all 36 PICAO members, not only on the 20 members of the Council which recently met at Montreal and which will reconvene October 15. Assessments were made on the basis of capacity to pay and on an estimate of proportionate benefits members will derive from the technical activities of PICAO.

Of the total estimated outlay of \$997,180, some \$295,780 represents the cost of the Council sessions recently concluded and of the Canadian Preparatory Committee. The fiscal year is to run from July 1 to June 30.

Another major feature of the financial report was the salary scale, topped by \$22,000 for President Edward Warner, plus an entertainment allowance of \$5,000. All salaries are in Canadian dollars, which have an average exchange rate of ten Canadian to nine U. S. Warner's salary would approximate \$19,800 U. S.

An assistant secretary-general with a salary of \$13,200 is to head the Air Navigation Bureau of the Secretariat. The Bureau also has a deputy assistant at \$10,000 to \$11,000. The Airworthiness Section of this Bureau is provided with a chief at \$8,000 to \$10,000, and three experts at \$7,000 to \$8,500. The chief of the Personnel Licensing Section rates a salary of from \$7,000 to \$8,500.

the Air Navigation Committee, which exercises the Council's authority with regard to airworthiness, navigation aids, communications systems, air traffic control, and other operating aspects. The Air Navigation Committee will first meet on October 2 and van Hasselt's committee on October 3.

A chairman for the third statutory committee, which is to prepare the setting up of the permanent Convention, has not yet been named because of a Council decision for postponement.

The permanent Secretariat, headed by Secretary-General Roper, is divided into three main parts: the Bureau of Administration, Air Navigation, and Air Transport, each of them further divided into Sections.

The Air Navigation Bureau is made up of Sections on: Airworthiness; Personnel Licensing; Landing Areas and Ground Aids; Air Traffic Control; Communications; Meteorological Aids; Aeronautical Charts; Search and Rescue; Accident Investigation. Four sections, handling operational, economic, statistical and legal studies, comprise the Air Transport Bureau.

The Bureau of Administration is the business and "housekeeping" office for PICAQ and handles such matters as the space and equipment, hiring of personnel, library, publications, and routine services.

Turks to Build British Engine

The Turkish Air League has signed a contract with the de Havilland Aircraft Co. which will result in the establishment of an aircraft engine factory near Ankara. The Turks will receive designs and equipment to manufacture one of the British company's engines under license. A group of Turkish engineers and technicians are now in England to receive six months' training in de Havilland factories.

French Offer Civilian Travel

Civilian passengers can now fly from Paris to London, Lyons, Marseille, Nice, Tunis, Algiers, and Casablanca. Service is still limited to high priority passengers on the air mail routes to Toulouse, Dakar, Damascus, Ankara, and the islands of Madagascar and Mauritius. The chief aircraft used on the services already in operation are the 16-passenger Bloch 220 and the 24-passenger Dewoitine 338. Junkers JU-52s, built in France during the German occupation, are being used on some of the domestic routes. Trial flights are already under way for routes between Paris and Natal and Paris and Calcutta.

PAA Blocked in Costa Rica

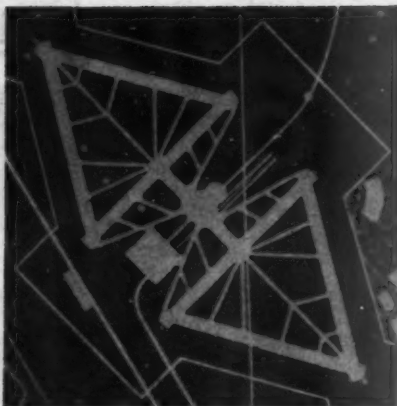
The Congress of Costa Rica has rejected an application by Pan American Airways to organize a local airline in that country. The new company was to be called Servicios Aereos Costarricenses. It is expected that PAA will submit another contract for approval after revisions to meet the objections raised by the Congress.

Britain to Combine Two Ministries

Britain's Labour Government has announced that the Ministry of Supply and the Ministry of Aircraft Production are to be combined into a single new Ministry. Meanwhile, the two agencies are operating separately, although both are headed by John Wilmot.

First Step for British Air College

A Board of Governors has just been appointed for a British College of Aeronautics as the first step in the organization of such an institution as recommended by a House of Commons committee last October. The college is to have its own airfield adjacent to the buildings, every modern experimental device, and a fleet of planes for study purposes ranging from light trainers to jets and trans-



Design for B. A. Airport—

The plan of the new Buenos Aires Airport, on which construction is now under way, shows an unusual opposed-triangle runway design. The new airport is located at Ezeiza, about 15 miles south of the Argentine capital, where the government has set aside about 19,000 acres for present construction and future expansion of the airport. At present the runways are designed to be 8,200 ft. in length but the site will permit runways of three miles. Only one of the two triangles is to be built at the outset. The second one will be started when there is sufficient traffic to require it.

ports. Students would be drawn chiefly from the RAF, the Naval Air Arm, government agencies, research establishments, and the aviation industry. The school will open in temporary quarters at Cranfield some time in 1946.

Want to Get OUT of Aviation

F. Hills & Sons, a British building firm, has worked almost solely for the Ministry of Aircraft Production during the war. It produced training equipment, flap mechanisms, propeller blades and aircraft plywood parts. But now, unlike most other companies drawn into aviation by the war, Hills & Sons want to drop their new connection. At their annual meeting officials stated that they were concerned with "extricating the business from the aircraft industry" in order to start again on construction work.

Portugal to Have Internal Route

It is expected that Portugal's first scheduled air service within the country will be inaugurated sometime in October on a route between Lisbon and Oporto. Three de Havilland 89 "Dominies" have been ordered by a new organization of which Carlos Bleck is technical director.

Panama to Build Large Airport

A contract for the engineering and design of a seven-million-dollar airport has been let to F. H. McGraw & Co. The general manager of the engineering firm, Leon P. O'Connor, said that the new terminal will be able to handle aircraft half again as big as the B-29. Panama's President Jimenez announced that the new airport will be financed without the aid of foreign funds. He has proposed two bond issues: one to be offered for public subscription and the other to be taken up by three national banks from their surplus funds.

Canada Sells All Surplus in Iceland

All of the war surplus left in Iceland by the Canadian Army and the RCAF has been sold on the spot by Canada's War Assets Corporation. Barrack and office supplies, landing field equipment, aircraft engines, and other materials were bought up by the RAF, Icelandic Airways, and the government of Iceland.

Colombia Plans Air Pick-up

Colombians plan to inaugurate air mail and cargo pick-up services, particularly in sections where it is difficult or uneconomical to construct airports. Capt. Ernesto Becaman and Mauricio Obregon recently discussed the project with officials of All American Aviation, Inc. Sr. Obregon, an aeronautical engineer who studied at Harvard and M. I. T., stated that the Colombian organization expected to carry passengers as well as mail and cargo.

Argentine Airline Operations

As the following table shows, Argentine airlines increased operations during 1944 in every category except that of air express.

	1944	1943
Miles flown (domestic and international)	1,923,877	1,686,146
Hours flown (domestic and international)	13,602	11,882
Passengers	78,537	67,117
Mail (pounds)	233,814	205,970
Express (pounds)	862,204	933,300
Freight (pounds)	993,445	719,400

New Brazilian Aircraft

Characteristics of the H. L. 6, a Brazilian private and training aircraft put into production this spring by the Henrique Lage Organization of the Compania Nacional de Navegacion Aerea, have recently been revealed. The aircraft is equipped with a 125 hp Lycoming engine.

Maximum total weight	1760 lbs.
Speed: maximum	124 mph
cruising (75% meto)	112 mph
landing	53 mph
Ceiling: absolute	16,400 ft.
practical	14,750 ft.
Range: in miles	682 miles
in hours	3¼ hours

Germans "Aided" Norway

Major Alf Heum, Norwegian representative to PICAQ, told the Council of that organization that before the war Norway had a few internal and international air routes, but that with one exception the operation of these routes was limited to summertime. Norway's terrain made it difficult to find suitable locations for airfields and expensive to construct them, even when sites were found. But during the occupation, the Germans enlarged existing airfields and built many new ones in all parts of the country. With these facilities and a large force of skilled personnel trained during the war, Royal Norwegian Air Transport, a state-owned company, plans transatlantic operations with New York and Chicago as U. S. ports. In addition to extensive internal operations. At present military aircraft and personnel, operating under the supervision of the Air Ministry, are flying more than 5600 miles daily over eight routes. Major Heum told the Council that his country welcomed the Chicago Conference and the subsequent establishment of PICAQ as a long step in the direction of removing barriers to international flying.

SILA Completes Test Flights

Five round-trip survey flights between the U. S. and Sweden were completed last month by Swedish Intercontinental Air Lines when a converted B-17 left La Guardia Field for Stockholm on the return leg of the transatlantic route. SILA expects to begin regularly scheduled flights as soon as the results of the survey have been studied. SILA hopes also to establish a route from Stockholm to the capitals of Brazil and Argentina, and test flights may start by fall. It has been suggested that fares as low as \$600-750 one way may be offered on this route.

KLM's War Operations

KLM, the Royal Dutch Airlines, has reported that during the last five years it made over 1300 passenger trips between England and Portugal with the loss of only one aircraft shot down by the Germans. That was the plane on which Leslie Howard was a passenger.



OFFICIAL U. S. NAVY PHOTO

Any port in a storm ... but there are no ports

More than one sailor has said, "It's a helluva place to fight a war!"

That's a miracle of understatement when you know the Pacific as well as the U. S. Navy knows it.

They know how many thousands of miles you have to go before you reach the fighting fronts.

They know there's almost continual rain and bad weather to hamper operations after you get there.

And they know there are no good ports!

Think of the thousands of ships, and the millions of tons of supplies it takes to keep our fighting forces moving toward Japan.

Imagine, if you can, the problem of handling those ships and supplies with no port facilities.

There are no giant cargo cranes...no miles of docks and warehouses...nothing but beaches, and human backs, and a refusal to call any job impossible.

Remember, too:

It takes 3 ships to do the supply job in the Pacific that 1 ship can do in the Atlantic.

It takes 6 to 11 tons of supplies to put a man on the Pacific battleline, and another ton per month to keep him supplied.

It takes a supply vessel, under ideal

conditions, half a year to make one round trip.

Add up those facts, multiply by the number of sailors, soldiers, and marines for whom the Navy is responsible.

Maybe you'll begin to realize what "no ports" can mean in the rough, tough waters of the Pacific.

Maybe you'll see that we have two reasons to be proud of the U. S. Navy. *First*, the way they've sunk the enemy's ships.

Second, the way they sail *your* ships... taking the worst the Pacific can hand them... but keeping the supply lines open... keeping the attack on *schedule!*

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Danes Build Plane During Occupation; Smuggle It to Sweden for Flight Tests

A new Danish personal aircraft—the KZ-III—was designed and built by Skandinavisk Aero Industry A. S. at Copenhagen during the Nazi occupation and then smuggled to Sweden where it was flight tested by A. B. Aero Service, Stockholm representative of the Danish firm, the Swedish aviation magazine "Flyg" revealed recently.

The new aircraft, christened the "Lark," was readied completely for mass manufacture before the war ended, and thanks to the ruse, the first production units are expected to come off the Copenhagen assembly line this fall.

The Lark is a two-place, "foolproof" high wing monoplane powered by a 75-100 hp engine (the prototype had a 90 hp Cirrus Minor). The fuselage is of steel tube and fabric construction, and the wing of two-beam wood construction fabric covered. A tentative price of from \$3,000-\$4,000 has been set.

The KZ-III has a span of 32 ft., overall length of 22 ft., overall height of 7 ft., and wing area of 140 sq. ft. Weight empty is 850 lbs., and design gross weight 1,430 lbs. It carries 15 gal. of gasoline, 2 gal. of oil, and has space for 120 lbs. of baggage. Landing gear is of the fixed semi-cantilever conventional type.

Performance tests with the 90 hp engine showed a top speed at 2,570 rpm of 112 mph, cruising speeds of 100 mph at 2,300 rpm and 90 mph at 2,100 rpm, stalling speed of 37 mph and landing speed of 34 mph. Initial rate of climb fully loaded is 600 ft./min., and glide angle 1:8 without flaps and 1:5 with flaps. Service ceiling is 13,000 ft. and absolute ceiling 17,000 ft. Range is 250-300 mi. with a fuel consumption of 4.8 gph. The aircraft is said to be able to take off from or land on (with brakes) a 165-ft. landing strip.

In addition to its secret designing of the Lark, Skandinavisk Aero Industry, A. S. also designed and built with German consent a twin-engined ambulance aircraft designated KZ-IV for the Danish Air Ambulance Service (Fonden). This aircraft was widely used in Denmark during the weeks before the German surrender, and it was in a KZ-IV that Count Folke Bernadotte was flown on some of his missions in connection with the surrender.

Homecoming Gift

"Little Norway," the famous airfield at Muskoka, Ontario, at which crews of the Royal Norwegian Air Force were trained, has been sold to W. H. Doherty of Gravenhurst, Ontario. The field is to be a homecoming present for his son, Flight Officer William Doherty of the RCAF, who was a commercial pilot before the war. The base will keep the name "Little Norway."



Meet in New York—These leaders in Latin

American aviation were photographed recently at a New York hotel. Left to right—Lowell Yerex, president of TACA Airways; Gen. Armando Trompowsky, Brazilian air chief; and Kenneth H. Murray, member of the advisory board of Aerovias Brasil.

International Operators, Like U. S. Airlines, Avoiding Outright Purchases

International U. S. flag lines appear to be showing the same reluctance about purchasing from current production the Douglas DC-4 type C-54E plane as domestic lines have shown with reference to the DC-3 type C-117.

The reasons are the same. Both national and international operators apparently prefer to get these types of planes through surplus procedures to avoid outright purchase. Under surplus procedures, the planes can be obtained on a yearly lease basis. By the time they have been operated a year, the equipment picture will be much clearer and the money saved by avoiding outright purchase can be used in buying the newer models, airline operators contend.

It has been learned through reliable sources that Douglas Aircraft Co. has produced 97 of the C-54E's—sometimes referred to as the "plush job"—for the Army. U. S. international operators are hoping that a number of these will be declared surplus so that they may be obtained for inauguration of new international routes granted by the Civil Aeronautics Board in its recent North Atlantic route case. But the four-engine types actually in sight are war weary C-54 passenger models which were among the first produced at the Douglas plant at Santa Monica.

Technically some 20 of these war weary

models are now excess to Army needs and will be declared surplus as soon as the Army is able to deliver them to fields designated by the Surplus Property Board. The Army cannot deliver them until maintenance and repair work has been completed.

Through the office of the Foreign Economic Administration, it has been learned that the Spanish airline, Iberia, has converted three military type models of the DC-3 for passenger use at a cost of \$8,000 each. Some sources predict that France and possibly Sweden will make quick use of the C-54 cargo types for passenger use once they are available through surplus procedures. It was pointed out that France does have the repair shops to make whatever conversions are thought necessary for early passenger operations. These shops have been operated for the U. S. Army.

Meanwhile Douglas Aircraft Co. is continuing its efforts to interest the airlines in buying a sufficient quantity of C-54E types so that it can keep production going on these models for a few months longer but so far it has met with the same general indifference that has characterized its efforts to get orders which would keep its Oklahoma City plant producing the C-117, which is a certifiable airline model.



The KZ-IV (left) and the KZ-III.



MORSE'S TELEGRAPH • ONE MILLION HOURS AGO

COLUMBUS SAILED • FOUR MILLION HOURS AGO

LEIF ERICSSON • EIGHT MILLION HOURS AGO

CYCLONE 18 OPERATING TIME
TEN MILLION HOURS

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A year is only 8760 hours. The Wright Cyclone 18 has a total flight and test time of *ten million hours*. In hours, years or annual rings in a tree, that's eleven centuries of time.

In the war years, the Cyclone 18 has gone through a fast, grueling development program. No other engine has ever had to take such punishment — excess temperatures, overloads, overspeeding, lean mixtures and maintenance handicapped by supplies.

From that usage, however, came continuous refinement and design changes . . . improvements which paved the way for increases in performance not

only of bombers, but of all types of planes powered by the Cyclone 18.

Thus, the Cyclone 18 built today for planes such as the Lockheed Constellation is the sum of this ten million hours of experience. The forced acceleration of war has produced an advanced engine, years ahead of its time, for all types of planes.

WRIGHT

AIRCRAFT ENGINES

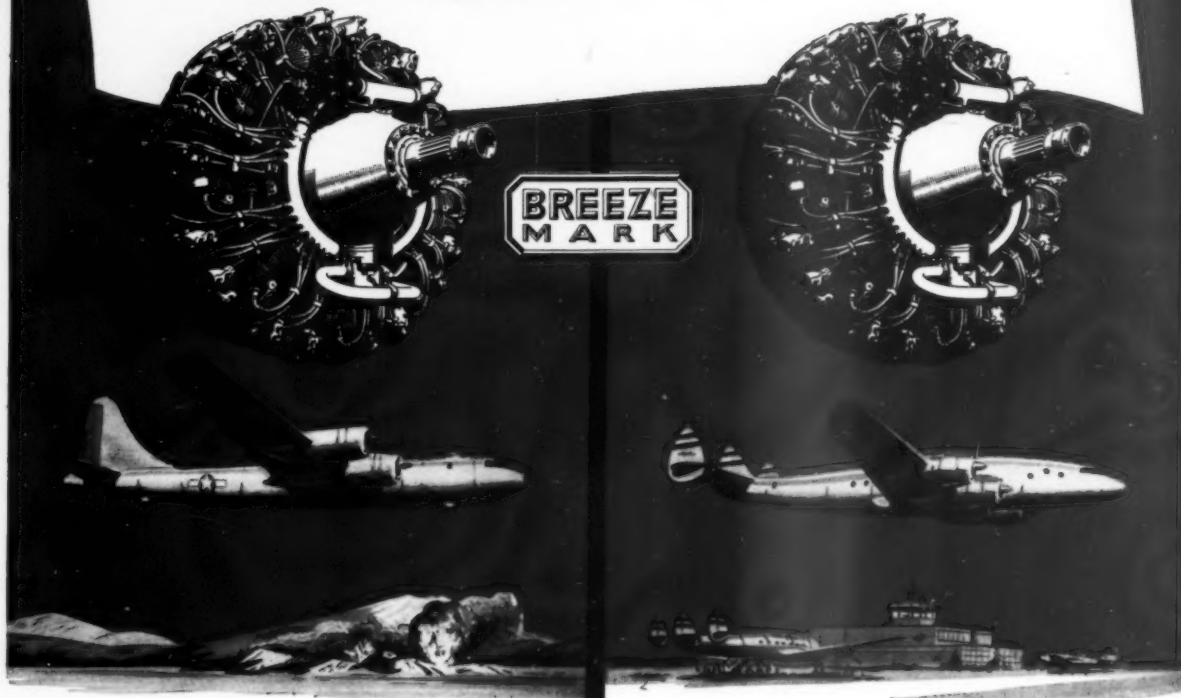
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Four Breeze-Shielded Wright Cyclone 18's rated at 2200 HP power the Boeing B-29 Superfortress in its smashing attacks against the Japanese homeland.

The 55-passenger Lockheed Constellation, whose trans-continental record of 6 hours, 58 minutes was powered by four Breeze-Shielded Wright Cyclone 18's.

● For many years Breeze has been recognized as the General Headquarters for Radio Ignition Shielding. The reputation which the products bearing the Breeze Mark of Quality built up on national and international airlines before the war has now been augmented by the service record of thousands of Breeze Shielding Assemblies for America's famous fighting aircraft, tank, marine and commercial engines. When final victory has been won, Breeze will once again be able to return to production of Shielding for commercial applications without delay for reconversion. And the reservoir of Breeze Shielding experience so materially increased in maintaining dependable communication in war, will be available to help pace progress in peace.

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Tata Seen in Important Role In India's Postwar Aviation

**Operates Over 3,000 Miles
Despite War Handicaps**

By ERIC BRAMLEY

BOMBAY—Tata Air Lines, owned and controlled by one of India's wealthiest families, is operating service over 3,000 miles of routes in India despite wartime handicaps, and will be an important factor in the country's postwar aviation.

Headed by J. R. D. Tata, a member of the family that owns many of India's industries, the company is at present operating the following services:

Bombay-Nagpur-Calcutta, one round trip weekly with DC-3 equipment.

Bombay-Bangalore-Madras, one round trip weekly, DC-3.

Bombay-Bangalore-Coimbatore, one round trip weekly, DC-3.

Delhi-Jodhpur-Ahmedabad-Bombay, daily with Beechcraft Expeditors, similar to the AAF's C-45.

Karachi-Ahmedabad-Bombay-Hyderabad-Madras-Colombo, daily with Beechcrafts.

At the present time, all the company's facilities have been taken over by the government as a wartime measure. The government owns all Tata aircraft, which it obtained through Lend-Lease. As is the case with Indian National Airways, India's other airline, Tata receives fixed charges for its services and is able to realize a small profit.

J. R. D. Tata, air-minded chairman of the airline (he flies his own plane) is at present in England and will depart shortly for the United States to negotiate for the purchase of additional flying equipment. The company is understood to be interested in Douglas DC-3s and possibly a larger model such as the Curtiss C-46.

Its present fleet consists of one DC-3 and eight Beechcraft Expeditors, together with some smaller types not used in transport operations. A DC-2 is also owned by the airline, but lack of spare parts has hampered use of the plane. In the past the company has used de Havilland Dominies, Wacos and other models.

On the DC-3, Tata uses a pilot, co-pilot and radio operator. One pilot flies the Expeditor, which carries five passengers (payload of 1,100 lbs. on a 600-mile trip).

Founded in 1932, the company has had only one fatal accident in its 13 years of operations. Its 20 pilots and co-pilots, all Indians, are well trained and well paid, by Indian standards, receiving from Rs. 800 to more than 1,200 monthly (\$240 to \$360).

Tata's passenger fares are in general similar to those of Indian National. Fare from Delhi to Ahmedabad to Bombay on INA is \$52.50, the same as Tata's from Delhi to Jodhpur to Ahmedabad to Bombay. Freight and excess baggage rates vary only slightly.

Tata's fare from Karachi to Colombo, a distance of 1,845 miles, is \$139.50, or more than seven cents a mile. The company hopes to get fares down to five cents a mile after the war.

The Tata passenger terminals are neat



and clean. In Bombay, for example, the terminal, although small, contains a restaurant, a waiting room, a library and other conveniences. The company operates its own bus from downtown Bombay for which there is no extra charge. Ticket personnel and other ground attendants are neatly uniformed.

Recent traffic figures are not available, and would not give a true picture because of government control and wartime conditions. The company realizes that it has a long way to go to develop passenger traffic, but it is optimistic. The carriage of cargo will also add to revenues, and the airline will become less dependent on mail subsidies, officials believe.

In the last prewar year, 1938, for example, Tata ran five trips weekly on its Karachi-Colombo route, flew 818,000 miles over the route, transported 430,000 lbs. of mail, 11,845 lbs. of freight and 514 passengers. Performance was 100%. Thus, less than 45 passengers a month were carried on the route, leaving lots of room for development. This was true on other Indian routes, including those of INA.

Officers of Tata are: J. R. D. Tata, chairman; B. W. Figgins, general manager; A. C. Gazdar, air superintendent; S. K. Kooka, traffic superintendent; B. K. Rao, operations superintendent; D. N. Bunsha, chief pilot. Gazdar and Kooka have been to the U. S. and both are great admirers of the way U. S. civil aviation has developed.

Head offices of the company are in Bombay House, Bombay while traffic offices are at Esplanade Mansions, Bombay.

(Editor's Note: Mr. Bramley has returned to the U. S. from a seven-months assignment as a Foreign Correspondent for AMERICAN AVIATION Publications. More of his articles on the Far East and the CBI theater will appear in early issues of AMERICAN AVIATION.)

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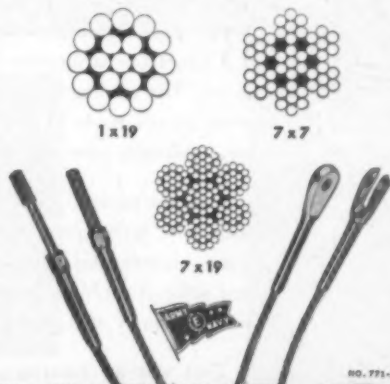
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in 1 x 19, 7 x 7, and 7 x 19 constructions.

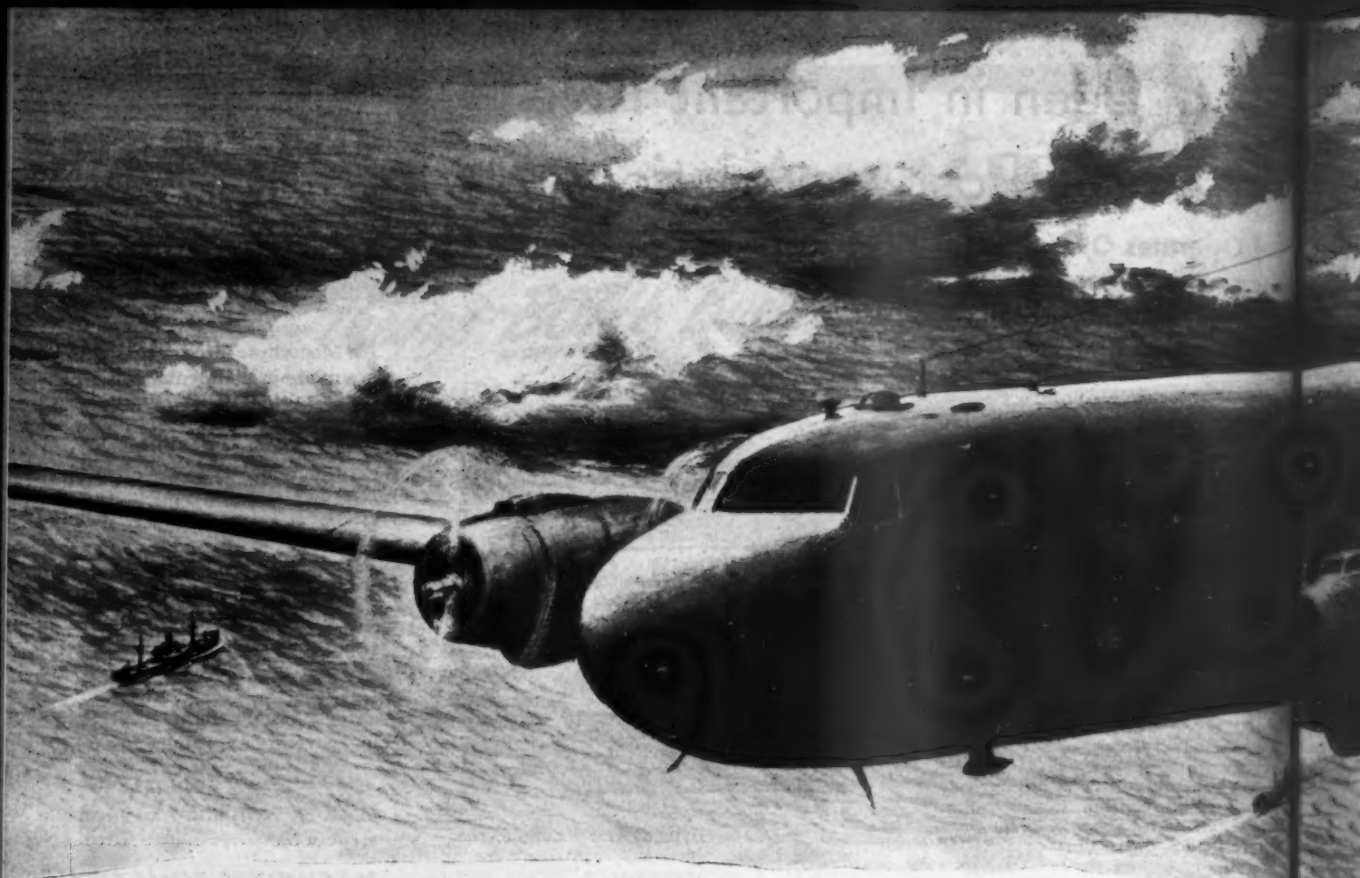
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Manufacturers of MACWHYTE "Hi-Fatigue" Aircraft Cables—"Safe-Lock" Cable Terminals—Aircraft Tie-Rods—Braided Wire Rope Slings—and Wire Rope for all requirements.



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**AIRCRAFT CABLES
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THE RCA RADIO ALTIMETER

BEFORE the war, transoceanic weather forecasts were based on barometric observations made by ships at sea. The readings were a simple matter, since they were always made at sea level, and the barometric measurements were not affected by altitude.

With the advent of war, the need for speed, together with new techniques of forecasting, required over-water observations from airplanes. This posed a new and difficult problem, since barometric measurements were seriously affected by the plane's altitude.

That was an insurmountable problem until RCA supplied the answer by developing the *High-Level Radio Altimeter*. This instrument provides readings of

absolute altitude with a high degree of accuracy, unaffected by atmospheric pressure or temperature. In planes provided with this new weather instrument, the pilot can make a barometric observation and radio it back to his base in a matter of seconds.

Use as a weather instrument is but one of many applications of the Radio Altimeter—applications that have largely developed in wartime, but that have a great peacetime usefulness.

RCA is the leader in Radio Altimeters. In fact, ALL of the Radio Altimeters used today by the Army, the Navy, and the British, are of RCA design. When you think of Radio Altimeters, think of RCA.

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A New Weather Instrument?



DETERMINING BAROMETRIC PRESSURE FROM AN AIRPLANE FLYING AT HIGH ALTITUDE

The necessary steps are:

- 1.** The barometric altimeter is adjusted, by means of the small thumbscrew, to the same altitude as accurately indicated by the Radio Altimeter (in the illustration the Radio Altimeter indication has gone once around the 5,000-foot scale and has advanced an additional 2,850 feet, or a total of 7,850 feet).
- 2.** The barometric pressure is then read from the barometric scale.
- 3.** This barometric reading, the outside air temperature, and the radio (absolute) altitude, are radioed to the meteorologist.
- 4.** The meteorologist applies correction tables and plots it on sea-level, 850 millibar, or other weather maps.

McCarran Airport Bill Slated for Early Debate

Senate Was Scheduled To Receive It Sept. 10

THE McCarran airport bill (S. 2) was slated for Senate debate Sept. 10 and early Senate action was anticipated in view of the fact that one of the major recommendations in President Truman's message to Congress called for all airports needed to serve expanding aviation needs.

The McCarran bill provides for a \$500,000,000 five-year airport construction program.

President Truman in his message to Congress said: "I recommend that the Congress enact legislation to provide the necessary airports and airport facilities to serve the great needs of an expanded postwar air transportation and commerce. A well-planned airport program would improve transportation, amplify the usefulness of the airplane and contribute to a healthy aircraft manufacturing industry."

"The Congress now has before it a survey of the present and future needs for airports in the United States prepared by the Secretary of Commerce. This report indicates the necessity for approximately 3000 new airports and for improvements to more than half of the existing 3000 airports. The report recommends that the program be spread over a period of 10 years and the cost be shared equally between federal and non-federal governmental agencies. I recommend passage of appropriate legislation to implement this program."

Other of the President's recommendations included creation of a single federal scientific research agency to coordinate and control all federal research and promote, support and finance private research, limited reductions in taxes for the calendar year 1946 and later modernization of the entire federal tax structure with further reductions; a single administrator to replace the present three-man Surplus Property Board.

Single SPDB Administrator Favored Over 3-Man Board

The House Committee on Expenditures in the Executive Departments on Aug. 29 voted unanimously to report a bill which provides for the replacement of the present three-man Surplus Property Disposal Board with a single administrator.

The committee followed a recommendation of W. Stuart Symington, chairman of SPB, who said the greatest single need today is a change to a single administrator which will make possible decisive administrative action. He asked that the bill to change from the three-man board to administrator not be tied up with other amendments designed to expedite surplus property disposal procedures, because of the prospect of legislative delays.

Obviously laying the groundwork for consideration of Symington for the post of Administrator, Rep. Jennings Randolph (D., W. Va.) brought out in questioning that Symington is a private pilot, interested in aviation and acquainted with industry problems hinging on dis-

posal of surplus aircraft. Rep. Randolph told Symington that he had received complaints that there were not sufficient sales centers, that possibly the distribution should be broken down to the unit of the airport. Symington appeared to agree with this conclusion and mentioned the aircraft service operators as possible

media for assisting SPB in future sales of lightplanes.

Symington said that 12,000 of 19,000 aircraft that have been sold under surplus procedures are in the lightplane categories, that the 12,000 planes which cost the government \$80,000,000 had been sold for \$30,000,000.

Transportation Association Attempts to Clear Name

Dislikes Being Labeled 'Railroad Front' Group

IN AN apparent attempt to offset some of the unfavorable publicity received when it was labeled a "Railroad Front" organization by a Senate Investigating Committee back in 1941, the Transportation Association of America recently published a history of its organization and activities in which it charges the Senate committee with "wholly erroneous and obviously inspired assumptions."

The Transportation Association of America came into the limelight a few months ago when one of its officers appeared before the House Interstate and Foreign Commerce committee, in executive session, to urge an overall investigation of this country's transportation system for the purpose of adopting legislative policies which are designed to bring about greater coordination and possibly integration of transport services. The Committee a week or so later did report out a resolution calling for such an investigation. It is now on the House calendar, awaiting action.

In Report No. 26, Part 2, 1st session, 77th Congress, a Senate subcommittee headed by Sen. Burton K. Wheeler (D., Mont.) published several letters which tended to bring out the degree of relationship between the American Association of Railroads and TAA.

The committee report stated: "The Association of American Railroads has its own program of education and research; it spends large sums of money every year to advertise facts as the railroads see them. Nevertheless the carriers deemed it necessary to set up another organization to carry on the same type of work. There can be no other explanation for this apparent duplication of effort than that in the Transportation Association the railroads saw an opportunity to offer to the public the same material marked 'railroad point of view' by the American Association of Railroads but by the Transportation Association of America stamped 'neutral,' 'independent' and 'unbiased.'"

Donald D. Conn, founder of TAA and its executive vice president, in his newly published report states that he refused to turn over the organization's files and provide office facilities for the Senate committee employees on the grounds that

the Senate resolution called for an investigation of "railroad organizations" and that TAA did not come within the purview of the Senate resolution. Conn said he told Sen. Wheeler that if the committee decided to subpoena the organization's records, he would contest the action in the federal courts. He added that the demand "for our records was abandoned."

Conn also claimed that he offered to turn over all information desired, copies of any letters, etc., if he would request the information by letter without reference to the Senate resolution.

The TAA executive secretary infers that the Senate committee, through a juggling of schedules, deprived him of testifying before it and relied almost entirely on letters taken from the files of railroad companies in compiling its findings and conclusions.

"The conclusions charging this Association with being a railroad front were obviously predetermined—the 'proof' gathered afterwards," Conn states.

"With authority of the Senate committee report, charging this Association to be a 'railroad front,' the Air Transport Association, the American Trucking Associations, and the Automobile Manufacturers Association entered upon a well coordinated campaign of misrepresentation of the Association's origin and distortion of its recommendations. This campaign coincided with a similar public relations program on the part of the Anti-Trust Division of the Department of Justice," Conn stated.

The Senate Committee report states that TAA followed a policy of keeping the railroads in the background in apparent concealment of its real purpose. This was carried out especially in the selection of members of the 48-man directorate.

According to the Senate report, Conn wrote: "All invitations are going forward to industry and the railroads in a relative proportion so that as we build our list of membership, interests other than the railroads will predominate."

"Only four of the 48 directors were railroad men," the Committee report continues. "However judging from a letter Conn wrote to the chairman of the Western Association of Railway Executives, the other 44 directors were chosen according to their 'railroad attitude.'"

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POWER UNITS. Compact power units are a new development of Foote Bros. engineers. Originally designed for airplanes, many manufacturers in varied fields are considering the application of these units to their machines. They may simplify a problem for you.

• The 89 years of manufacturing experience back of Foote Bros.—the large plant capacity devoted solely to producing power transmission equipment—the staff of skilled engineers whose background includes the solving of almost every type of problem in the field of power transmission—are your assurance that this organization can help you on the machines or equipment you are producing today or planning to produce for the future. Let our Engineering Division work with you on your requirements in power control equipment.

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McC American Aircraft To Build Light Plane

Will Be Two-Place Metal

a new personal "Ensign" is made by the McC American Aircraft Co., of Long Beach, Calif., which during the war was engaged in the manufacture of aircraft small parts.

The new "Ensign" is described as a two-place, all-metal, flush-riveted plane equipped with tricycle landing gear and full-vision enclosure and powered by an 85 horse-power Continental engine. Gerald Adler, president of the company, said the fly-away price of the ship would be \$3,000.

An announcement that the plane would be test flown at the Long Beach Municipal Airport Sunday, September 2, and a preview showing of the ship at the Lakewood Country Club in Long Beach, turned out to be premature. The mayor of Long Beach, city councilmen, officials of the Long Beach and Los Angeles Chambers of Commerce and a number of other invited guests gathered at the Lakewood Country Club and enjoyed an excellent buffet luncheon but did not get to see the plane. Subsequently it was announced the ship was not ready and also that the test flight would have to be postponed.

Inquiry disclosed that considerable work still has to be done on the plane and that it will not be ready for test flight for several weeks.

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The All American Aircraft officials said they plan to establish twenty direct factory branches in the principal cities of the country for sales and service.

Boom in Private Flying Noted Along West Coast

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The Sixth Region of the CAA is issuing pilot certificates to servicemen on the basis of military competency at the rate of 1,000 a month. Private pilot examiners are being appointed as rapidly as possible. In Los Angeles alone, the general inspection division office gave 830 examinations during June, and 1,650 in July.

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All American's 2-Place Ensign

Aero Services Firm Converting Surplus Military Craft Into Executive Planes

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The move is the first step in a wide-scale program to reconvert Aero Services into a peacetime aviation service enterprise encompassing almost every phase of the industry, according to Gordon Hussey, owner of the company.

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The plane that flew 20 years **- IN THREE**



No other air transport now built or planned can give you such assurance of proven performance as you will soon get from the huge, dependable Douglas DC-6, cruising in excess of 300 miles per hour along the routes of leading airlines.

GREATEST NAME IN AVIATION

DOUGLAS DC-6

Sister Ship of the Famous C-54 Combat Air Transport

All American Aircraft To Build Light Plane

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Sister Ship of the Famous C-54 Combat Air Transport

Taylorcraft Claims 1st Delivery of Postwar Plane; Sells for \$2295

What is claimed to be the first delivery of a postwar civilian aircraft was made by Taylorcraft Aviation Division, Detroit Air-Craft Products, Inc., Alliance, Ohio, on August 30. The ship was a 65 hp Taylorcraft BC12-D, and was delivered to George Galipeau, Northampton, Mass. and Meriden, Conn. distributor, who will use it to instruct Smith College students.

The BC12-D is a side-by-side two seater with steering wheel controls, and a cruising speed of 95 mph. It is said that it can land on a road strip. Selling price of the new lightplane is \$2,295, and Taylorcraft hopes to deliver one to every distributor within the next 60 days. The ultimate production goal is 5,000 aircraft a year.

According to Nash Russ, Taylorcraft president, the company plans to employ two shifts of 1,000 workers each within three months, and will soon be hiring new employees as well as re-employing 1,200 laid off on V-J day.

Civilian Flying Bans Are Lifted in West Coast Area

The wartime proclamation limiting civilian flying in the western vital defense zone, an area extending 150 miles inland from the Pacific Coast, has been rescinded by order of Major General H. C. Pratt, Commander of the Western Defense Command.

H. A. Hook, Regional Administrator of the Civil Aeronautical Authority of Santa Monica, said civilian pilots on the coast may fly at will but he warned them to avoid localities where military units continued gunnery and bombing operations. He also said it is expected that some of the Army and Navy traffic problems will continue in a few areas.



Nash Russ, President of Taylorcraft, does a prop-spinning pose with his company's postwar Taylorcraft No. 1. George Galipeau, Northampton, Mass., and Meriden, Conn., distributor, who purchased the aircraft, is at the controls.

Luscombe Ready to Start Work on Postwar Silvaire

Plans for immediate manufacture of the first postwar version of its Silvaire all-metal personal aircraft have been completed by Luscombe Airplane Corp. At least 1000 Silvaire's are scheduled to be completed at Dallas by the end of the year. First of the Silvaire 8E's was completed there early in August and is now being tested. More are on a new assembly line.

Two hangar units have been about two-thirds completed on the site acquired early this year by Luscombe near Dallas for development into a model personal plane manufacturing, servicing and operating center. The two structures have been almost completely assembled and work has been started on office partitioning and pouring cement for the main floors.

A part of the servicing operations have been moved into the first hangar to be built. Parts for the Silvaire are being fabricated at a rate to assure adequate servicing of aircraft now in the field and to anticipate future requirements.

Rotor-Craft Scheduled To Test Helicopter

Gilbert Magill, president of Rotor-Craft Corp. of Los Angeles, announced his company expected to test flight the prototype model of the new two-place helicopter now in construction for the Army, shortly after the first of the year.

The Rotor-Craft helicopter, which is of tandem design, is constructed along conventional aircraft lines with a streamlined fuselage resembling that of an airplane.

With rotors fore and aft (the aft rotor tops a stabilizing fin), the helicopter has an overall fuselage length of 18 feet and ground-to-rotor height of 7 1/2 feet.

Counter rotating rotors, 18 feet in diameter, are three-bladed and rigid, without drag or flapping hinges, thus reducing structural weight and increasing mechanical simplicity.

"With tandem rotors we are able to eliminate the necessity for long support booms," Magill said. "In so doing, we make the machine more compact and capable of a greater percentage of useful load."

Gross weight of the craft is only about 1,000 pounds, Magill said, and useful load will exceed 40 per cent. About 50 per cent of the fuselage is plexiglass. Magill said the helicopter will probably sell for around \$3,000.

The Rotor-Craft Company also has a four-place job, to sell for around \$5,000, on the drawing board, Magill announced, and in addition has 12-passenger and 24-passenger helicopters in the early design stage. The latter craft, Magill said, probably are two or more years away.



Here is an artist's sketch of the X-2 helicopter which Rotor-Craft Corp. of Los Angeles says it is building under military contract. The X-2 probably will be Test Flown after the first of the year. Chief features are tandem design of the rotors and an airplane-like fuselage. Four, 12 and 24-passenger helicopters are under design by the company.



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Aeronca Completes First Postwar Private Aircraft

Aeronca Aircraft Corp., Middletown, O., has completed its first postwar private plane, according to John W. Friedlander, president. The company expects to turn out 550 planes by the end of the year, he said. Orders exceed expectations and the company has received more than 7,000 inquiries, according to Friedlander. Although all war contracts have been cancelled, Aeronca now has 350 people working—one-half of them on orders and one-half on reconversion activities. Friedlander said the company hopes to have 1,000 working by Jan. 1.

First Postwar Harlows Ready By Late This Year, Report

Harlow Aircraft Co., Alhambra Airport, Alhambra, Calif., announces that first deliveries of its postwar models are scheduled for late this year. West-Marquis, Inc., Los Angeles and San Francisco agency, has been retained to handle a consumer and business magazine advertising campaign featuring the Harlow Cadet two-place training and sports plane, and the four-place all-metal personal plane, according to H. F. Keenan, president of Harlow. Many former dealers have been reappointed and former open territories assigned to new dealers.

Girl Mechanics Enrolled

Cal-Aero Technical Institute at Grand Central Airport, Glendale, Calif. has enrolled its first girl student in its mechanics course. She is Barbara Eurich of Meville, Mont., a private flyer.

Thefts of Planes and Parts Becoming Common, Says Steers

Thefts of airplane parts and instruments, as well as complete planes, is becoming common according to Sheldon B. Steers, Director of the Michigan Department of Aeronautics and president of the National Association of State Aviation Officials.

In a letter to all airport managers in Michigan, Steers urged that extra precautions be taken to protect aircraft and equipment.

Congress recently passed an amendment to the Motor Vehicle Theft Act making it a felony to transport or fly a stolen aircraft in interstate commerce.

Piper Sales Training Program

Piper Aircraft Corp. has inaugurated an aviation sales training program for its dealers and distributors which was developed by Aviation Institute of Professional Sales Training. It consists of a series of 24 field-tested weekly lessons divided into three major groups: 1. Pre-planning the Sales Interview for Aviation Products; 2. Dramatizing the Sales Interview for Aviation Products and Developing Sales Personality for Aviation Selling. Piper recently inaugurated a uniform accounting system for its fixed base operators to improve their business operation.

Rankin Aero Academy Reorganized

Rankin Aeronautical Academy operated as an Army Primary contract school by Tex Rankin and Robert S. Norswing has been reorganized under the name Rankin Aviation Industries with headquarters at Tulare Municipal Airport, California. Rankin has been appointed west coast distributor for Republic "Seabees" and Ercoupe distributor for Oregon, Washington and northern Idaho.



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Wisconsin Plans 78 Airports, 14 Seaplane Bases

Several Small Landing Areas Also Discussed

WISCONSIN'S newly created Aeronautics Commission was scheduled to meet with the CAA and the State Planning Board in Madison late in August to discuss, among other aviation matters, the state's airport program.

Thus far Wisconsin's airport planning has been carried on by the State Planning Board, which has been engaged in studies along this line for the past four years, and will continue for the next two.

As the airport program now stands, Wisconsin has plans for 78 Class I, II and III airports, 14 seaplane bases and a number of smaller landing areas, including Class I fields, strip fields and airparks.

Since a constitutional provision prohibits the state from engaging in works of internal improvement, initiative for airport development lies with local governmental units. To aid in over-all planning, however, the State Planning Board has prepared an airport system study.

The study covers such factors as air transport, which will require more airports if it is to develop; factors affecting airport design and classification; the selection and acquisition of airport sites; an airport plan; step-stage development of airports; airport revenue and aviation training; and, finally, an airport system for the state.

Two pieces of legislation passed this year by the Wisconsin legislature also have served to spur the state's airport program. One is a zoning act, which provides for the limitation of heights of buildings, structures and objects of natural growth located within three miles of an airport site; the other legislation provides for reciprocity between Wisconsin and adjoining states in the development of airports.

The State Planning Board in its study takes cognizance of the fact that "airports are transportation facilities as much as highways," and points out that the "construction and maintenance of public airports at public expense is justified as in the case of public highways, and for the same reasons."

Three major steps for an adequate airport program are recommended in the study. They are: 1. The selection and acquisition of an adequate airport site; 2. the making of a master plan calculated to utilize the full possibilities of the site selected and acquired; 3. the actual development of the airport through stages by means of construction projects for which the construction plans are in accordance with the master development plan.

The master development plan, the study explains, should be devised to provide for development of the airport by a series of minor steps "so taken that the most immediate necessities will be provided first, and so coordinated with each other that each completed step will add to what has been done before . . ."

The study recommended that for both commercial and private flying airports square parcels of land be acquired by the communities. The minimum classification airport reasonably adequate for

A SYSTEM OF AIRPORTS
PROPOSED FOR WISCONSIN
CLASS II AND GREATER



commercial use is a Class III, the report said, requiring a minimum compact area three-fourths of a mile or 3960 feet on each side (square). For private flying, a one-half mile square site of 160 acres was recommended.

"The ultimate measure of the success of any airport is the use that is made of it," the study said. "Such use depends to a very large extent on the air-mindedness of the people who are within easy reach of the airport, to whom its services are readily available."

To develop air-mindedness, the Wisconsin State Department of Public Instruction already has suggested aeronautical curriculae for the public schools, and the State Planning Board recommended that scholarships be set up for worthy students with ability to fly, but who lack the financial means.

Long Beach to Try Again

The city council of Long Beach, Calif., is planning to try again with a bond issue for the expansion of the Long Beach Municipal Airport. A \$1,500,000 bond issue was defeated by a narrow margin but the council feels a number of conflicting issues on the ballot was responsible. As a matter of fact, the council is so confident an unhampered airport bond issue will carry, it probably will hike the ante to \$2,000,000 or \$2,500,000.

Work Speeded on Moisant Airport in New Orleans

With 96 applications to provide air service into or out of New Orleans already on file and the recent inauguration of service by a sixth major airline providing the first direct air link between the city and midwestern U. S. routes, work has been stepped up on the \$5,000,000 Moisant International Airport. The airlines may move to Moisant, third in New Orleans' metropolitan area, late in September or early in October. Three 5000 foot runways and a 7000 foot runway already are in service at the field. Additional hangars and temporary administrative quarters are now being constructed. Moisant is one of the few fields already equipped with instrument landing systems.

New Orleans Airport on Lake Pontchartrain will be set aside almost exclusively for the use of private fliers. Calender Airport, now being used by military planes, will enter the commercial and private flying picture shortly.

The three fields, combined, have a total of 10 runways in excess of 5000 feet, paved taxi-strips, aprons and complete hangar facilities.

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South Carolina to Establish State System of Airports

WITH THE MILITARY services about to turn back to municipalities about 22 Class 4 airports, the State of South Carolina will shortly establish a state system of airports embracing many of the military airports as well as some 50 airports and airfields built during the past ten years by the state, according to Dexter C. Martin, director of aeronautics for South Carolina.

Under the state system plan, any municipality may turn over its airport to the state which in turn will assume complete maintenance responsibility. No municipality is obligated to turn over its facilities, however, unless it so desires.

When the military services began their airport programs many municipalities promised to continue maintenance when the military services turned back the sites. But now many communities are finding that the cost of maintenance is too great, considering the size of some of the airports, and are willing to turn them over to the state.

Martin said the state would assume maintenance costs only on airports that are formally accepted within the state system and estimates the state maintenance cost will run about \$500,000 annually.

Thirty-two persons are currently on the state aeronautics payroll, 16 of them engineers, and Martin is now directing a state-wide survey selecting additional sites and performing soil analysis. He estimates that 85% of the Army, Navy and Marine fields will go into the state system because of high maintenance costs. The state itself has built about 50 airports, five during 1945.

Martin said the state will encourage operators to lease building and hangar sites but that there would be no exclusive concessions on state airports. The American Legion of the state recently adopted a resolution opposing exclusive operating rights and although municipalities can grant exclusive rights to fixed base operators on city-owned airports if the cities wish to do so, Martin said he would oppose vigorously any exclusive rights throughout the state. He said all state

airports would be treated as public highways—open to all.

Sites will be leased to fixed base operators on each state airport, but the operators will have to erect buildings according to architectural and other standards as required by the state aeronautics commission. Leases will be made on the basis of 2% of gross revenue of the operators going to the state commission. Martin said he was encouraging returned veterans to get into the local fixed base field and said he expected quite a number to open up businesses.

Kansas Airport Conference To be Held October 24-25

A Kansas State Airport Conference, called by the School of Engineering and Architecture of Kansas State College, will be held Oct. 24 and 25 to assist state communities who are now confronted with problems of airport development.

Construction, maintenance and management of smaller fields will be dealt with by speakers enlisted from Federal, State, Municipal and industrial services. Attendance is expected to be largely from among those responsible for publicly owned airports, but the conference is open to all, according to Dean R. A. Seaton of the College.

Cullinan Heads N. Y. Air Bureau

William E. Cullinan, Jr., New York district airport engineer of CAA since 1943, has been named director of the Bureau of Aviation of the New York State Commerce Dept., succeeding Leslie A. Bryan, who is returning to Syracuse University as Franklin Professor of Transportation. Cullinan assisted in organizing the new bureau as airport engineer. From 1940 to 1943 he was with CAA in New York as airport engineer in charge of review and approval of airport plans.

Master Airport Plan for County

The Kern County planning commission of Kern County, Calif., has called a public hearing for October 1 to consider a master airport plan it has blue printed. The planning commission proposes to establish 43 airports within the county including five in Bakersfield. The county now has 18 airports.

Jimmie Says No

Lieut. Gen. Jimmie Doolittle put thumbs down on the offer of Los Angeles to name its municipal airport "Doolittle Field." While appreciating the honor, he told city officials that he didn't think the airport should carry his name. Subsequently the Los Angeles City Council rejected an ordinance to naming the field for the noted pilot and general by a vote of 10 to 3.

Missouri Aviation Sells Its Hangars At Kansas City Port

Missouri Aviation Corp. this month sold its hangars on the Municipal Airport leasehold in Kansas City, to Parks Aircraft Sales & Service, Inc. Missouri Aviation occupied this location since the inception of its organization in 1929.

In releasing its airport holdings, Missouri Aviation Corp. discontinued its aircraft and engine repair station in order to concentrate on an accelerated postwar program as one of the nation's leading aeronautical supply houses.

Urges Metropolitan Areas Study Airport Needs Now

Large metropolitan areas, like Los Angeles, will save themselves money and grief by starting to make studies immediately of their postwar needs for airports for private fliers, according to Art Ayres, of Pan American Airways.

Estimating Los Angeles might need as many as 100 airports to accommodate private fliers, Ayres pointed out these fields should be located before areas become congested and therefore too costly.

Ayres observed that in 1939 there were fewer than 12,000 airplanes in this country, of which practically 10% were in California and 5% in Los Angeles County.

Some surveys, Ayres said, indicate there will be close to 500,000 privately owned planes in this country within a few years after the war and more conservative estimates vision 300,000. If the prewar ratio holds good at least 15,000 of them will be in Los Angeles County.

Expect Many Military 'Ports To Revert to Civil Control

Many military airports will be returned to civil control as soon as they satisfy no further military or naval need, according to a recent joint Army-Navy statement. Release of the bases depends on the future international situation, extent of participation in any international organization, size and deployment of the armed forces, and the status of aeronautical development at the time base selections are made.

Until final determination can be made of required installations, currently occupied military and naval airports may be made available by permit for joint civil and military use to an extent which will not interfere with essential military and naval operations.

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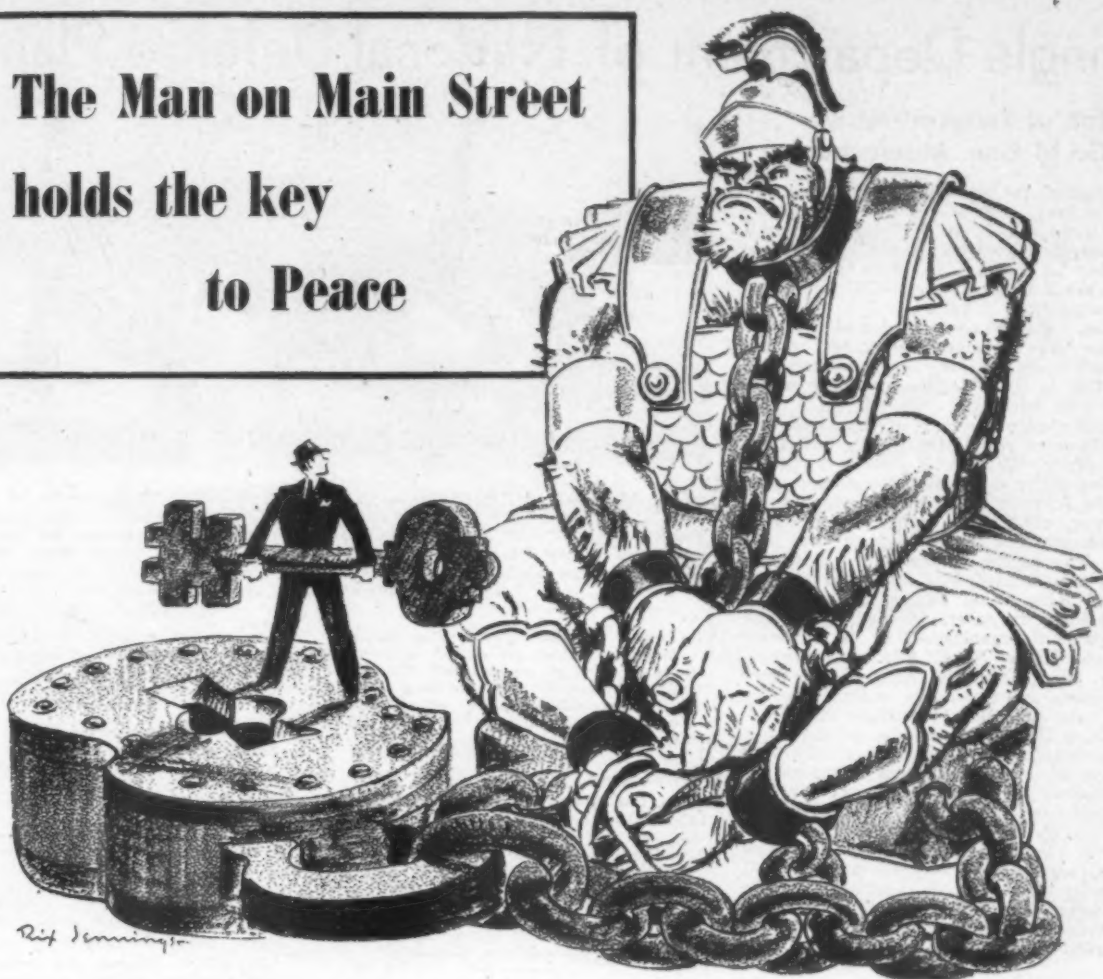
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The Man on Main Street holds the key to Peace



JOHN Q. CITIZEN, the Man on Main Street, has a vital stake in post-war aviation. Aviation will provide him with new, world-sweeping utility; he in turn can influence the growth and development of aviation by his lively interest in its affairs. As for National Security, the idea of Permanent Peace Through Air Power is one that can come to achievement only through public support.

Americans have already started locking out the wars of the future by personal support of organizations which are trying to keep America active and

strong in the air. As the Germans admitted, when their war was done, Air Power played a major role in the Nazi defeat—and Air Power is strong security against future aggression.

John Q. Citizen has other tools for peace at hand. His interest in private flying, fast transportation, local air terminals, air strips and air parks; his support of air shows and exhibitions; his interest in aviation literature, books, education and research; his participation in aviation organizations . . . all these are specific ways in which he will help make peace through Air

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Single Department of National Defense Planned

Job of Secretary May Go to Gen. MacArthur

PLANs for a single department of national defense are in the hands of the Joint Chiefs of Staff and the AAF reportedly is ready to back General MacArthur as the first Secretary of National Defense if he wants the job, United Press reported from Yokohama.

Gen. Eisenhower is deemed logical choice for supreme commander of the armed forces by many Army sources, according to UP. He, too, probably would get AAF backing.

Under the proposed plan, the Air Forces would have equal status with the Army and Navy. High AAF officers are pressuring action in Washington on a report to the Joint Chiefs of Staff in which every theater commander approved the idea of reorganizing the existing services set-up. This report, presented last February, was tabled until V-J Day because Admiral King voted against action on it. The Navy, in general, opposes the single department organization, as do members of the House Naval Affairs Committee. The House Military Affairs Committee members are reportedly enthusiastic for the proposal. Rep. Thomason (D., Tex.), ranking Democratic member of the latter committee, said, "I am strong for a bill to create a unified defense command."

General Carl Spaatz, who recently returned from the Pacific told interviewers that he favored a central military command. In this he was later supported by General Arnold who said over an NBC broadcast that a single department should be designed to "neutralize the known and potential powers of enemy nations in the shortest possible time."

Flight Training Continued

Flight training for 17 and 18-year-old high school graduates will continue to be provided in the post-war era by the Navy which is anxious to guarantee a continuous flow of new pilots into the fleet.

12th Air Force Dissolved

The U. S. 12th Air Force, first AAF unit to enter combat in North Africa and Italy, has been dissolved. Rapid deployment operations have reduced the veteran 12th to less than 4,000 men who have been transferred to the AAF Service Command or to AAF/MTO Headquarters to await disposition. For administrative purposes, the structure of a number of former 12th AF units has been maintained to cadre strength.

Largest Airfield

Andrews Army Air Base, Camp Springs, Md., located 10 miles southeast of Washington, D. C., and containing 15 miles of taxiways and four 5,500-foot runways in its 4,700 acres, is scheduled to be the largest airfield in the world and the center of U. S. air defense when construction is completed. The project will cost an estimated \$15,000,000. The Continental Air Forces, now headquartered at Bolling Field, is readying to move to Andrews in about two months. The field was dedicated last April in honor of the late Lt. Gen. Frank M. Andrews.

Squadron 11 Celebrates

Air Transport Squadron Eleven, largest operating arm of NATS, Pacific Wing, and



New Version of 'Widow'—This deadlier and more nimble version of the Black Widow Night Fighter now is in production at the Northrop Aircraft plant in Hawthorne, Calif., the Army has announced. The new model is designated as the P-61-C and is the third production model of the Black Widow line. Designed for use against Japan, the new plane now is expected to be used in training and in peacetime research and development.

the largest transport operating squadron in the Navy, celebrates its second anniversary this month. As of August, 1945, VR-11's 83 Douglas "Skymasters" and nine Douglas "Skytrains" were completing daily schedules over 20,000 of the 27,000 route miles in the NATS Pacific system.

Precision Bombing

Maj. Gen. James M. Bevans, AAF commander in the Mediterranean, said that eight out of every 10 bombs dropped during the war by the 15th Air Force fell "within 2000 feet of target-center." More than six of every 10 bombs, he said, came within 1000 feet of the point of intended contact. The 15th operated B-17s and B-24s, dropped a total to 300,276 tons of bombs on targets in Africa, Italy, Austria, and Rumania.

2,000 Nazi Planes Found

Special disarmament wings of the Royal Air Force have discovered about 2000 serviceable German aircraft, most of them fighters, in the British zone of occupation since the surrender early in May, according to press dispatches.

1 Out of 3 Trained in WFC

One in every three air men in the AAF were trained in the Western Flying Command. Maj. Gen. Ralph P. Cousine, commander, disclosed on the command's fifth anniversary. Of 186,000 AAF pilots, more than 60,000 were trained in the western command, he said. It also trained 24,000 bombardiers, half the entire number in the AAF, and 112,253 of the Army's 286,000 aerial gunners.

'Larry' Fritz Sets Record

Brig. Gen. Lawrence G. Fritz, piloting a C-69 Lockheed Constellation, set a new non-stop record of 14 hours, 12 minutes on the 3600-mile New York-Paris flight, it was announced at La Guardia Field.

What About U.S.-Built Bases?

The question of what happens to American-built military air bases in the western hemisphere now that the war is over is boiling up throughout the Caribbean, in the Guianas and in Brazil. Touring these areas, correspondents for wire services, newspapers and magazines found a widespread feeling among army men that there should be permanent operational rights for both military and commercial reasons. But they were in the dark

as to whether there have been any recent diplomatic negotiations concerning peacetime use of the bases.

Bombs Cut Jap Output in Half

Radio Tokyo has made public official and semi-official government estimates showing that Japan's aircraft production was cut in half by U. S. carrier-based and superfort air raids.

Japan's once substantial merchant fleet was cut to approximately five per cent of its pre-war tonnage by the raids, radio Tokyo indicated.

'Green Project' Completed

The ATC's program for returning high point American military personnel from the European theater, known as the "Green Project," was completed Sept. 10. As of that date, the ATC had flown over 150,000 of these servicemen to the U. S. During the height of the operation which started last June nearly 1000 men per day landed at the Miami Army Airfield. Returning to the U. S. with the Green Project's termination will be large numbers of aircraft and personnel from the ATC's South Atlantic, North African and Caribbean divisions.

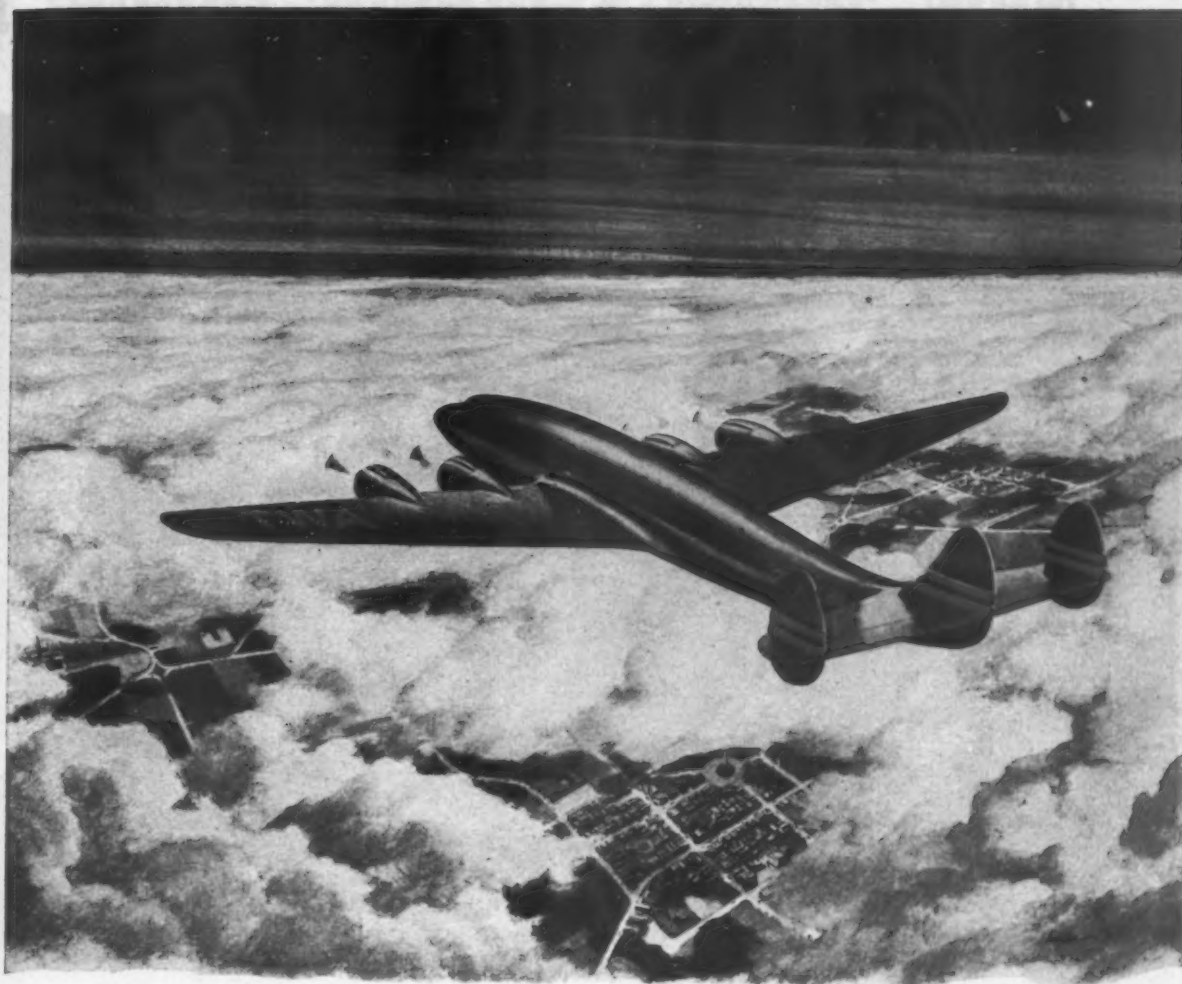
● Brig. Gen. Tom C. Rives, returning to Wright Field after a nine year absence, has been assigned as chief, Radio and Radar Subdivision, Engineering Division. He replaces Col. Hobart R. Yeager, now en route to a station in the Pacific.

● Capt. Laverne A. Pope has been appointed director of photography for the U. S. Navy bureau of aeronautics. He replaces Capt. Robert S. Quackenbush, Jr., assigned to sea duty.

● Maj. Gen. Westside T. Larson has been named commanding general of the U. S. Eighth Fighter Command. He replaces Maj. Gen. William E. Kepner who is now commander of the Ninth Air Force.

● Col. Ray Ireland, formerly director of Priorities and Traffic section, ATC, has been promoted to Deputy Chief of Staff, ATC. He was a traffic official of United Air Lines, prior to entering military service.

● Brig. Gen. Laurence C. Craigie, veteran Wright Field officer, has been named chief of the ATSC's engineering division, in charge of research, development and testing of AAF aircraft and equipment.



NEW VIEW OF THINGS

Sooner or later, all of us need a change of viewpoint to make the day's affairs fall into proper perspective. So each TWA flight is planned not merely as a time-saving journey, but as a pleasant change from the usual. Even seasoned air travelers say they get a new view of things after a few enjoyable hours as guests of TWA.



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A B. F. GOODRICH development so important that it was kept a strict military secret until just recently, can now be disclosed. It's a new kind of synthetic rubber, better for tire making than the ordinary synthetic rubber which is in general use by the tire industry.

This new rubber is a B. F. Goodrich development. Tires made of it give longer wear than those made of ordinary synthetic. They also run cooler under heavy loads, which is especially important as the trend continues to heavier planes.

B. F. Goodrich is making this new rubber in plants operated for the Government. It has been tested in all kinds of tires on all kinds of vehicles from passenger cars up through big bombers. Every tire containing it will stand up better under heat or constant flexing, will

wear longer, and will have increased bruise-resistance.

This new rubber development is one more example of the kind of work going on constantly at B. F. Goodrich—the kind of improvement that will bring American aviation far better products after the war than we ever had before. It's one more indication that you get something extra in value and economy whenever you buy a B. F. Goodrich product.

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THE NEW BENDIX PACIFIC 3000 PSI HAND PUMP



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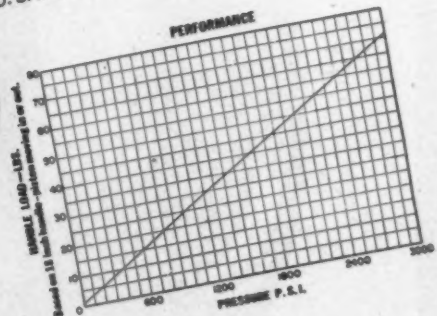
The pump incorporates a double-acting piston which produces equal volumes on the in and out strokes. An integral suction check valve employing the proven Bendix plastic poppet* is mounted at right angles to the main bore.

Weighing only 1.85 pounds, the new pump has been fully tested in accordance with Specification AN-P-14 (revised to 3000 PSI) and has met impact load requirements of twice the operating load on each stroke. Dependability and long life have been conclusively proven by the successful completion of a 250,000 cycle life test.

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*U. S. Pat. No. 2358950

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NEW JERSEY 17



Mitscher Sees Need For Additional Planes In Navy's Policing Fleet

Vice Admiral Marc A. Mitscher, Deputy Chief of Naval Operations for Air, on the occasion of the 32d anniversary of Naval Aviation, August 30, stated his belief that fleets of aircraft carriers should be policing the oceans at all times to insure peace in the postwar world. Besides the carrier fleets, he said that 4300 naval aviators and 2600 aircrewmembers should be trained each year, and that at least 3000 new planes should be added to the Navy's forces during the next year.

At an Aero Club dinner at Washington, D. C., on the same occasion, Rear Admiral Harold B. Sallada, chief of the Navy Bureau of Aeronautics, said that the U. S. must continue to support scientific efforts in pure and applied research. Naval aviation for the present and future will always require enough sound aircraft for immediate use to provide incentive for the production of ever-improved planes.

Such a program, he said, "will be expensive—but infinitely less expensive than another war. Let us as taxpayers willingly shoulder the burden, and let us urge our representatives to assure that sound policy shall become effective through adequate implementation."

ATSC Perfects Process For Supplying Fresh Vegetables

An ATSC project to supply fresh vegetables to AAF personnel based at places where not even a blade of grass normally grows, has emerged from the experimental stage and will shortly go into effect at some of the more remote and arid AAF bases in various parts of the world.

This recent contribution to the health and morale of overseas AAF soldiers is accomplished through chemical gardening, otherwise known as hydroponics. This is the first time the chemical process has been applied in such vast proportion. Adaptation of the method to AAF needs has been developed by the Aero Medical Laboratory of the ATSC's Engineering Division.

Two projects are already in operation. One is at Ascension Island and the other is at a south Pacific station. The third and latest project was recently airshipped to British Guiana. Ten additional projects are in the planning stage. One hundred and six items were necessary to complete the latter project.

ATC's 'Green Project' Ended Sept. 10

The ATC's program for returning high point American military personnel from the European theater, known as the "Green Project," was completed Sept. 10. As of that date, the ATC had flown over 150,000 servicemen to the U. S. During the height of the operation which started last June nearly 1,000 men per day landed at the Miami Army Airfield. Returning to the U. S. with the Green Project's termination will be large numbers of aircraft and personnel from the ATC's South Atlantic, North African and Caribbean divisions.



'Gang Plank'—Douglas Skymaster staff transports now carry their own "gang planks" in the form of a lightweight collapsible metal ladder stowed beside the main cabin door.

Army-Navy Munitions Board Made Key Defense Agency

Responsibility for planning for industrial mobilization in the event of a future emergency has been assigned to the Army and Navy Munitions Board by President Truman.

With this action, the Board becomes one of the key agencies in the defense program to be adopted for the security of the United States after the present wartime military establishment is demobilized. Assignment of the task to the Board is a part of the program of reconversion which is now taking place in the Government preparatory to the liquidation of wartime agencies and the shifting of their functions to regular peacetime agencies.

The Board is at present being reconstituted and strengthened in the light of experiences gained during World War II and in the light of far-reaching changes which seem to lie ahead. Originally activated in June, 1922, the Board came under the direction of the Commander-in-Chief by Military Order in July, 1939. The Board formulated the Industrial Mobilization Plan of 1939 which was made available to the agencies later assigned the task of mobilizing the country's resources for war.

The President has directed that the Executive Chairman shall be a civilian, to be named in the near future by the Under Secretary of War and the Assistant Secretary of the Navy. The Board is not only to coordinate the current joint procurement planning of the Army and Navy but will supervise all joint Army-Navy boards and committees dealing with industrial matters.

Further Reductions In AAF Announced

Further reductions in the size of the U. S. Air Forces for the interim period between the close of hostilities and peacetime normalcy have been announced by the War Department.

The projected "Interim" Air Force is to be reduced in personnel from approximately 720,000 to 600,000 and from approximately 65,000 planes to 7,500 combat planes assigned to operational units. In addition for the year that the interim period has been projected, from 500 to 1,000 transport planes will be kept in operation or in reserve, for use primarily in providing special transportation to occupied areas.

Air Force spokesman, practically repudiating a series of charts which as of July 15 set forth the prospective requirements of the air force for a V-J Day thought to be months away, admitted at a War Department press conference that the sudden collapse of Japan had made it necessary to scale down sharply the AAF's estimates of need. However it was revealed that the charts of July 15 did form the basis for the cutbacks and contract terminations which were announced for the aircraft manufacturing industry soon after Japan's announcement of the acceptance of surrender terms.

Reduction of Air Force personnel from 2,150,000 officers and men to approximately 600,000 is to be accomplished under an orderly process designed to give effect to a man's length of service, his efficiency rating and his personal inclination—to remain in or get out of the service.

Using its July 15 figures as a basis, the Army Air Forces expected to announce shortly the number and type of units, the number of personnel and types of planes that it will require during the interim period for the various commands, which include the occupied area of Europe, the Japanese home islands, the Caribbean area and continental United States.

Nimitz Favors Opening Pacific Bases to Airlines

Admiral Nimitz is reported to favor widest possible development of civilian aviation in the Pacific and ready access to Army and Navy fields for commercial operators, according to a Navy spokesman. He also predicted that airlines soon would take over air mail service now maintained by the military transport services.

Guam will become a key American naval and air base in peacetime with facilities for commercial air and ship travel, and Wake will soon be reconverted into a major air base, he was reported as saying.

Col. Nichols Decorated

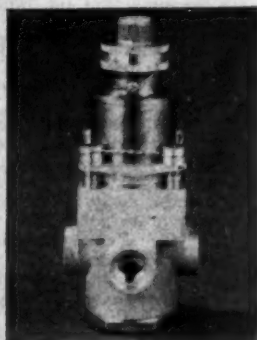
Col. Reeder G. Nichols, formerly chief of Civil Aeronautics Administration Air Carrier Radio Section, has been decorated by the Army with the Legion of Merit for his work in installing radio facilities in the Pacific. As Regional Communications System Group, he planned, supervised and installed radio navigational stations in Australia and New Guinea.

General Controls

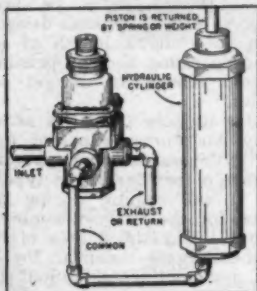
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Stronger, Lighter All-Glass Aircraft Ultimate Goal of ATSC, Say Engineers

Disclosure that a stronger, lighter all-glass airplane is the ultimate goal of the Air Technical Service Command in its experiments with glass laminate highlighted recent Los Angeles meeting of the Institute of Aeronautical Sciences.

The paper on glass laminates and their application to aircraft structure was read by Captain George B. Rheinfrank, Jr., of the Engineering Division, Air Technical Service Command, Wright Field. Co-author of the paper was Captain Wayne A. Norman, also of the ATSC Engineering Division at Wright Field.

Seeking to improve performance through smoother and more stable exterior surfaces, the Air Technical Service Command undertook the development of new materials and structural design through the use of low-pressure reinforced laminates in 1942, Captain Rheinfrank said. This research resulted in a threefold development in which a new basic structural material, a new low-density core material and new low-pressure laminating resins are combined in a simplified sandwich type aircraft structure.

The new material, glass laminate, weighing the same as magnesium, is composed of 60 per cent glass fibres and 40 per cent bonding resin by weight. Unlike window glass, which shatters easily, the glass cloth in the laminate is made of microscopic high-strength filaments possessing entirely different physical qualities.

Two types of glass sandwich fuselages were fabricated and tested on a BT-15. Both a glass-balsa sandwich and an all-glass sandwich fuselage on a strength-weight basis proved 50 per cent stronger than the standard metal fuselage. An all-glass sandwich wing now is under construction at the Air Technical Service Command, Captain Rheinfrank said, and the ultimate goal of this development is an all-glass airplane.

Captain Rheinfrank expressed the belief that this new basic material eventually will change present concepts of aircraft design and manufacture and influence every phase of the aircraft field including design, engineering, tooling, fabrication and maintenance.

How the United States established itself as a formidable airpower by turning her research reserves into the channels of production was outlined to the Institute by Brig. General L. C. Craigie, Acting Chief of the Engineering Division, Air Technical Service Command, Wright Field.

The Air Technical Service Command will need not less than \$250,000,000 annually for engineering and research as compared to the less than \$5,000,000 a year it had for this purpose, including salaries, before the war, he said.

Among the developments which will come through continued research in peacetime are supersonic speeds, new sources of power and radio and radar control, General Craigie said.

Aero-medical requirements for health, comfort, efficiency and safety of air crews and passengers while flying in pressurized cabin aircraft, was discussed by Col. W.

Randolph Lovelace of the Aero-Medical Laboratory at Wright Field.

In military aircraft, cabin pressurization is used to eliminate the need for continuous use of oxygen, to prevent aeroembolism or to reduce the cabin to a level where use of pressure breathing is not required. In commercial aircraft, however, the health, comfort and safety of the passengers are of prime consideration and Col. Lovelace outlined the advantages of isobaric cabin altitudes below the conventional 8,000 ft. level used for military aircraft.—F. S. H.

Continuous Flow Fuel System Developed by AAF

A new continuous flow fuel system developed recently by Army Air Forces engineers will practically eliminate the fuel system as a potential cause of aircraft accidents if it lives up to the claims being advanced for it by the Air Technical Service Command.

The new system maintains a maximum supply of fuel in the principal tanks at all times and automatically feeds gasoline to the engine as long as there is any left in the aircraft, thus permitting the pilot to fly without worrying unduly about the fuel selector valve and switching over from one tank to another. It is said to be of simple construction, based upon a simple arrangement of fuel lines and the use of a simple float operated valve rather than a complicated arrangement of gadgets or changes in pressure.

The new system will be installed in all military aircraft, according to ATSC.

AAF Develops Instrument Indicating True Airspeed

A new instrument designed to give a direct reading of true airspeed has just been announced by the Army Air Forces, and promises to play an important role in future commercial operations. It is known as the G-1 True Airspeed Indicator, and was developed by AAF technicians.

The G-1 combines the function of true airspeed meter, altimeter and temperature gage, automatically correcting for temperature and altitude and furnishing a direct reading of true airspeed. In addition it compensates for the effect of compressibility on both the pitot tube and thermometer bulb, a correction which becomes increasingly important as aircraft approach the speed of sound.

The new instrument is designed for an operating range of 100-500 mph.

List of Peacetime Military Bases Being Studied by AAF

A third revised list of airports both in and outside the U. S. to be retained as military bases in the peacetime era is now being considered by the AAF Command. Names of bases and airports which will not be retained as a part of the national defense program should be published by the AAF sometime in October.



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To meet this demand, PESCO now offers an entirely new fuel booster pump—a tank-mounted, compact, electric motor-driven, centrifugal pump in various models for either submerged or external installation. PESCO precision workmanship assures the highest standards of performance and dependability. Write today for new "PESCO Vapor Control" Booklet No. 9. PESCO Products Co., (Division Borg-Warner) 11610 Euclid Ave., Cleveland 6, Ohio.



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Packing House for Airborne Perishables Planned

**Myers Says He Can Fill
10 Planes Daily 'Tomorrow'**

By FRED S. HUNTER

SIX MONTHS AGO, Ralph E. Myers, who probably grows more lettuce than anyone else in America, bought 30 acres of land adjacent to the ramp of the Salinas, Calif. Air Base.

Sometime this winter Myers is going to build the nation's first airport packing house for the processing the perishables the Ralph E. Myers Co. will ship by air from California to the markets in the east.

The move is further evidence of Myers' conviction that air shipment of perishables not only is feasible, but is due to become one of the country's major post-war developments.

Myers already has invested nearly \$100,000 at his plant in Salinas to carry out experimental air-borne shipments last year, plus a tidy sum in out-of-pocket losses incurred in those experiments.

"With a ton-mile rate of 10 cents, our company alone could fill 10 planes a day out of Salinas starting tomorrow," declared Myers. "And that would be only a beginning."

May Run Own Planes

Myers does not want to go into the transportation end of the business. He's a grower, packer and shipper and he believes transportation is the province of the airline operator. But if the airlines—or the non-schedule operators—fail to provide the service at rates which the buying public can afford to pay, Myers says he is ready to start operating his own planes. Already he has made a few inquiries into the return load situation and has talked to Consolidated Vultee and Douglas Aircraft about airplanes.

He sounds a challenging note to the other large-scale market growers of fresh fruits and vegetables to start them thinking about getting aboard the band wagon. "The airplane is our best challenge to the growing frozen foods industry which is growing so fast," he says.

Today, the Ralph E. Myers Company is making two regular shipments a week in a 90-day experimental contract in conjunction with Consolidated Vultee and American Airlines, using a four-engine Consolidated Model 39 plane with a payload of 18,500 pounds. In addition, it has contracted with National Skyway Freight Corp., recently organized non-schedule operator, for four 10,000-pound shipments in the "Flying Tiger Line's" Conestogas.

Under his contract, Myers is paying \$221 per hour of flight to fly his strawberries, grapes, melons, lettuce and other products from California to the east in Consolidated's M-39. American Airlines' air cargo department takes over on the return trip. It is understood Consolidated's rate to American is approximately \$175 per hour.

Myers is tapping six big eastern markets in these experimental M-39 shipments. They are New York, Philadelphia, Detroit, Cleveland, Boston and Chicago.

Myers has no doubt that the discriminating housewife will pay a premium for a tree or vine ripened fruit or vegetable. But whether the premium can be kept



Ralph E. Myers (right) poses with shipment of airborne produce.

within the reach of her pocketbook depends upon the airlines and the plane manufacturers. In other words, it is strictly a matter of shipping rates and tariffs.

Myers has been knocking at the doors of transport plane manufacturers and the airlines for a long time now. Temperature control is one of the first requirements if air transportation of perishables is to build into as big an industry as Myers believes it will.

Myers, for example, shipped a plane load of strawberries, plums, grapes, cantaloupes and lettuce to Philadelphia. Minor mechanical trouble required a two-hour stop at Fort Worth in a ground temperature of 108 degrees. Then weather at Philadelphia held up the plane at Washington nine hours in a temperature of 97 degrees and very high humidity. Forty per cent of the strawberries gave up the ghost and the cantaloupe arrived on the over-ripe side.

Simple of Solution

Temperature control is simple of solution, Myers says. Proper insulation would serve the dual purpose of keeping sun heat out and holding the coolness from the pre-cooling in. In such an insulated plane a relatively small air-conditioning booster unit could keep the cabin at an even temperature enroute.

Ground time is one of the problems of the fresh fruit and vegetable air shipper because much time frequently is lost in moving produce through terminal markets. The answer to this problem, according to Myers, is the establishment of freight terminals at airports so that consignees could pick up their shipments very quickly after the arrival of a plane.

Myers had air transportation of perishables in the back of his head at the time he organized his company in 1939, and he went to several of the airlines to discuss the idea. But in 1939, the airlines had too many troubles to give any appreciable thought to such revolutionary ideas as the shipment of peas, peaches and persimmons in their cargo pits.

Myers had to wait for time—and the war—to bring new conceptions to trans-

portation by air and profits to the airlines, whereupon he promptly scurried back to them and asked: "Now?"

He found a kindred soul in J. Prescott Blount, who had just joined the air cargo department of United Air Lines. Blount had been brought into United because of his railroad and packaging experience, but Blount knew how many carloads of produce the railroads hauled and he foresaw a big potential market for the airlines in air-borne perishables. He went to work on it.

United entered into an agreement with Wayne University of Detroit and the Great Atlantic and Pacific Tea Company to conduct a year's experiment in the shipment of fresh produce by air.

United obtained Civil Aeronautics Board and military approval to charter its Sunday night Cargoliner schedules when air mail and priority express loads were light. Myers promptly chartered the ship whenever it was available—and ran into no end of grief.

First off, United was using its Cargoliners to upgrade pilots and operated them under double limits. As a result, 75 per cent of the flight failed to arrive on schedule and Myers found himself confronted with such posers as having suddenly to sell in Denver a shipment of strawberries originally consigned to Cleveland.

Changed His Procedures

Second, Myers made his shipments to wholesale commission firms and discovered the movement through a terminal market is slow. In New York, for example, it takes practically 48 hours. The air-borne freshness was lost by the time the produce reached the buyer.

Third, Myers shipped run-of-the-mill fruits and vegetables. In appearance, there was little difference from those shipped by surface transportation and buyers couldn't detect much visual superiority.

Myers turned his merchandising processes upside down. First, he shipped direct to retailers so that no ground time would be lost between plane and seller. Then he dressed up his air-borne packages to give them sales appeal.

The OPA was another hurdle. On his first shipment, Myers paid the regular air express rate of 71 cents a ton mile for the lettuce he sent to New York, but on subsequent plane load shipments United gave him a special experimental rate of 17 cents a ton mile.

Myers continued to take the losses on his shipments until he made the 90-day contract with Consolidated Vultee and American Airlines for the semi-weekly flights of the M-39 air freighter. Then the OPA established a ceiling price allowance for air-borne produce for the period. Now his operation, even on its limited scale, is paying its way.

Everything Myers ships by air is wrapped and packaged under the brand name "Magic Carpet." Every head of lettuce, for example, is individually packaged by a machine which was developed in Myers' Salinas plant for this purpose.

There are several reasons why this is done. The first reason, of course, is to assure the housewife she is buying a head of lettuce actually air-borne and not

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Western Electric



RADIO AND OTHER ELECTRONIC EQUIPMENT FOR A WORLD ON WINGS

something else. But in addition, it facilitates handling when shipped by air and, even more important, a better head of lettuce can be sold.

Myers has developed new shipping containers—like a four-pound crate for lettuce in comparison to the standard 10½-pound crate used in surface shipping—and he has brought about an entirely new concept for the merchandising of perishables in consumer packages.

Myers sees no reason why there should not be a great short-haul market in the air transportation of perishables as well.

Road vibration injures strawberries, figs and other fragile perishables whether they are shipped by rail or by truck. There is no road vibration in an airplane and the most fragile fruits can be transported without bruising or other damage.

"I think we can say air shipments of perishables will be feasible from 100 miles up," said Myers.

Myers believes the air freight rate for perishables should not be greater than 10 cents a ton mile. At that rate, the shipping charge becomes 10 cents a pound in Chicago, 12½ cents in New York.

"I feel the consuming public will willingly pay a premium of 10 cents a pound," said Myers.

Cuts Down Speculation

"More than 13,000,000 tons of perishables a year are shipped by the growers in this section of the country," continued Myers. "That's a volume that certainly should interest those engaged in air transportation. Why, out of California and Arizona 150 cars of lettuce alone are shipped every day. It's big business."

The air shipment of perishables has its economic aspects in relation to dollar profits, Myers explained.

"Growing soil products is a speculative business from the moment you plant the seed," he said. "It keeps right on being speculative until the product is paid for. It takes nine days for a shipment to reach New York. What happens to market prices in that nine days? Perhaps prices will advance and the buyer on an F.O.B. Salinas purchase will make a speculative profit. But maybe prices will go down and he'll take a loss. By flying, this speculative element will be largely eliminated."

Myers farms 6,000 acres in Salinas, 3,600 acres in the Imperial Valley and 1,200 acres in the San Joaquin Valley. Annually he ships 4,000 cars of lettuce, 1,600 cars of carrots, 700 cars of celery, 800 cars of melons. In his "Magic Carpet" air shipments, however, he extends his operations far beyond his own farm lands and buys from fellow growers strawberries, grapes, figs, plums, peaches and many other products.

Loening to 'Survey' Civil Aviation

The National Advisory Committee for Aeronautics has directed Grover Loening, its aeronautical consultant, to make a survey of civil aviation to suggest the additional lines of research for NACA to follow "to be of the greatest usefulness to the private plane and airline field." Loening plans to visit all major plants engaged in new airline transport developments, and many of the plants where new private plane developments are under way. Formerly consultant to WPA, Loening joined NACA last May.



Northeast's 12th—Capt. Prentice S. Green (left)

is congratulated by Northeast Airlines' vice president-operations, Milton H. Anderson, on the airline's 12th anniversary last month. Anderson was captain of the plane which inaugurated air service from Boston into northern New England in 1933.

Delta Proposes Four Flight Plans on Chicago-Miami Run

Four new flight patterns are planned by Delta Air Lines when it inaugurates its new Chicago-Miami route later this year, it was announced by C. E. Woolman, vice president and general manager.

They are, with mileages and flight times based on local schedules: (1) Chicago to Miami via Asheville, 1280 miles, 8½ hours; (2) Chicago to Miami via Atlanta, 1331 miles, 8¾ hours; (3) Chicago to Charleston, S. C., 817 miles, 6½ hours; (4) Ft. Worth, Texas, to Miami, 1479 miles, 10 hours.

Express flights, with alternate stops to serve various cities, will speed up the flying times listed, and cut-offs will shorten the local routing.

The Texas-Florida service will be provided by flying Delta's present route between Ft. Worth and Savannah, Ga., in conjunction with the southern portion of the new route, and will result in direct, one-carrier service into Florida for the first time for the cities of Ft. Worth, Dallas, Shreveport, Monroe, Jackson and Meridian as well as additional service into Florida for Birmingham. Delta plans to start service in 60 or 90 days, if all necessary equipment can be completed in that period.

The route will be opened with 21-passenger DC-3's, but studies are now being made to determine which type of larger equipment will be best suited for the operation. New ships being considered include the 66-passenger Lockheed Constellation, the 52-passenger Douglas DC-6, the 44-passenger Douglas DC-4, and the 36-passenger Curtiss-Wright CW-20 (Commando).

Delta will operate maintenance bases at Chicago and Miami, but will continue to perform most of its mechanical work in Atlanta, where general offices and shops are located.

Many U. S., Foreign Lines Affiliate With Air Time Institute

Nearly fifty U. S. and foreign airlines have affiliated with the Air Time Research Institute, a scientific body created by the Waltham Watch Company to study all phases of time in its relation to the air transport industry, it has been revealed by Jay Jerome Williams & Associates of Washington, D. C., who have developed the program for Waltham.

Never specifically interested heretofore in watches designed for aviation purposes, Waltham is making a big invasion of the field. Among the U. S. carriers signed up this year are Delta, PCA, Braniff, All-American, Northeast, Chicago & Southern, Continental, Colonial, Mid-Continent, Hawaiian, Essair, Western, Alaskan, and Caribbean Atlantic. Foreign carriers include the TACA System, Aerovias Braniff, Expreso Aereo Inter-Americano, and Aer Lingus (Irish Airlines).

Among the trustees of the Air Time Research Institute (a non-profit organization) are Prof. Harlow Shapley of Harvard, one of the world's noted astronomers; D. W. Rentzel, of Aeronautical Radio, Inc.; Ralph E. Gould of the Horological Institute of America and now with the U. S. National Bureau of Standards; and Wayne W. Parrish, editor and publisher of the American Aviation Publications.

First of the subjects on the Institute's agenda, according to Jay Williams, is consideration of the creation of a worldwide "air time." In the U. S. alone there are four land timebelts. The Institute is working on the "Skytimer," a combination of clock and air-speed register which, in addition to telling time, will dramatize, as does a speedometer, the speed of flight in units of seconds.

The Institute plans to create one or more national or international fellowships for the specific study of solar-terrestrial relationships that bear on radio communications and their expanded role in the development of air travel.

Continental's Modification Work Ends; Gets MATS Job

The contract under which Continental Air Lines for over three years has operated the Continental-Denver modification center for the Air Technical Service Command ended Aug. 31. Robert F. Six, president, announced, but Continental will service transient aircraft for the Military Air Transport Service under terms of a contract effective Sept. 1.

The servicing work will be done in Hangar 4 at Denver Municipal Airport and will employ 150 persons. Crews will be on duty 24 hours a day to do maintenance work on all types of military airplanes which stop at Denver en route to other points. The contract was signed by the Seventh Service Command.

Under the ATSC contract, work was done on 2155 B-17 Flying Fortresses, 25 P-51 Mustang fighters, 6 British heavy bombers, and 402 B-29 Superfortresses. Peak employment reached 3200 persons.



What! No shower?

"Damnation!" snorted Mr. Smith. He sat down irritably on the edge of the built-in bathtub and glared gloomily about the cabin of the postwar plane.

"But look, Mr. Smith," soothed the bright young salesman, "this Airborne Chateau Model doesn't need a shower. Just see here: built-in bar . . . two-way radio-phone with video screen . . . complete kitchen and bath facilities . . ."

"Except for shower!" broke in Mr. Smith. "Listen, young man. I don't care if this plane *will* sit down on my badminton court, or carry the whole family non-stop to Nassau. I still want a shower!"

"But Mr. Smith," placated the salesman, "we can't have everything, you know."*

*That's right, Mr. Smith, you can't have everything. The beautiful, beautiful postwar plane you've set your heart on is still a long way off. For a year or two, after the war, there's bound to be a shortage of miracles. For example, the first postwar WACO you see won't be essentially different from the prewar WACO you owned or envied. But don't be discouraged . . . post-war or prewar, WACO means comfort and stability . . . speed and safety for all-weather flying. WACO means better planes . . . for better flying! THE WACO AIRCRAFT COMPANY, 29 Peters Avenue, Troy, Ohio, U. S. A.



Waco
WACO AIRPLANE

ALL ARMY CARGO-TRANSPORT GLIDERS ARE WACO DESIGNED

American Converting DC-3 Into 28-Passenger Model

IT WAS EXPECTED that by the time that this issue went to press, American Airlines would have completed work on converting a Douglas DC-3 aircraft into a 28-passenger model for experimental use in low cost operations.

Forerunner of what may become the day coach type of air transportation, it is understood that American plans to use the ship in the heavy traffic area between Boston and New York.

The seven additional seats are made possible by removal of a considerable portion of the forward compartment and by putting the seats closer together. As now planned, hostess and food service would also be included.

Word that such a conversion job was being undertaken created a considerable stir in airline circles. It presages a day of keen competition and indicates that some of the top thinking in airline circles is along lines designed to bring transportation costs within reach of the average traveler.

W. R. Hall Named

W. R. Hall, 36, former Royal Canadian Air Force pilot, has been named manager of the western department of United States Aviation Underwriters, Inc., with headquarters at 175 West Jackson Blvd., Chicago. He has been in the home office in New York since Jan. 1.

Western Gets Award

Lester G. Braidye, president of the California Safety Council, has presented Western Air Lines with a special merit award for flying the equivalent of 132 trips around the world without an accident in the past year.

AA Sells Overseas

American Airlines System ticket counters are now handling reservations on American Export Airlines for European points. Control of AMEX was recently acquired by American Airlines. AMEX is operating three round-trips weekly between New York and Foynes, Eire, with connections to London, England.

Western Personnel Return

With the discontinuation of Western Air Lines' military division based at Edmonton, Canada, on Sept. 1, all of Western's personnel on duty in Canada and Alaska will be transferred to domestic operations in the U. S.

Continental Loses Lodestar

Fourteen passengers and the crew of a Continental Air Lines Lockheed Lodestar escaped injury when the aircraft burst into flames on landing at Albuquerque, N. M., Aug. 27. The plane was destroyed. Continental immediately entered negotiations with the Surplus Property Board to replace the plane with a Douglas DC-3 type.

Western Plans for Tourists

Accompanied by photographer Lynn Rogers, Ted W. Cate, advertising manager of Western Air Lines, has started a tour of the western national parks preparatory to an extensive advertising campaign aimed at vacationists. Western will base its promotion on the theory that 45% of persons in the East will come to California, the Rocky Mountain area or other playground spots in the western states and Canada for their vacations.

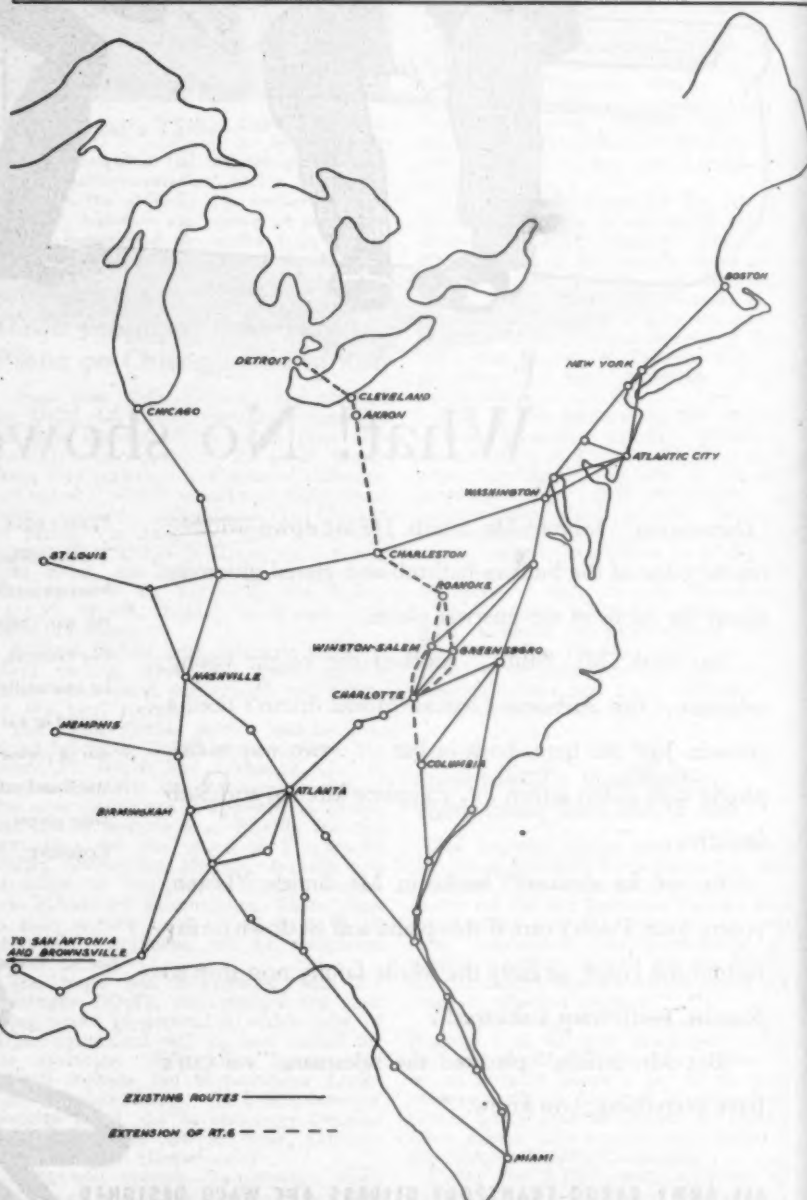
PAA to 5-Day Week

The Pacific-Alaska Division of Pan American World Airways will return to a normal five-day week, L. C. Reynolds, division manager, has announced. The work week had been increased to 48 hours early in 1943 to meet war demands with employees receiving a special wartime increase. The wartime pay increase is now being adjusted downward by one-half, instead of being eliminated entirely.

Growing Signs

Each month every certificated airline files detailed financial and performance reports with the Civil Aeronautics Board. The reports are on forms known as 2780s. Up until this summer, mail and express figures were given in pounds and pound miles. Now the 2780 forms have been revised in terms of tons and ton miles, and a new classification under traffic statistics is given for air freight. From pounds to tons is an historic step in air transportation.

Eastern's Expanded Route System



This map shows Eastern Air Lines' newly expanded route system. The Detroit-Columbia segment (broken lines) was recently awarded by the CAB

12 seconds of the most valuable time "on earth"!

Jet assisted take-off, born of war, will be commercial flying's greatest single aid when final peace comes. Directly adaptable to any type of airplane . . . capable of flying maximum payloads out of nearly any field at any altitude . . . Jet Assistance is the solution to the airlines' problem of getting profit payloads off the ground. The 12 seconds average thrust duration of

AeroJet Assistance is worth much to the operator who looks to extra profits.


AeroJet Engineering Corporation has made many thousands of jet assistance units (Jatos) for the Army and Navy. Its research and develop-

ment facilities are unequalled. AeroJet invites inquiries from any organization interested in learning more about this new science. An informative booklet—"Report from AeroJet"—has been prepared. Write for it today.

With Jet Assistance: Civil Air Regulations Take off Flight Path—2587 Ft.

Without Jet Assistance: Civil Air Regulations Take off Flight Path—4000 Ft.

DC-3 Analysis as Described in "Report from AeroJet"



Send today for your FREE copy of "Report from AeroJet"—a factual story of immediate and vital interest to everyone in aviation.



AeroJet Engineering Corp.
285 West Colorado Blvd.
Pasadena, California

AeroJet Engineering Corporation • Affiliate of THE GENERAL TIRE & RUBBER CO.

AeroJet

United Earmarks 10 Million For Electronic Development

UNITED AIR LINES is ready to spend approximately \$10,000,000 for the purchase, development and adaptation of electronic and other technological aids emerging from the war, W. A. Patterson, president, reports. He referred to these as "the most important development of the war insofar as air transportation progress is concerned."

While Patterson said his company's plans for use of the various devices are still in the formative stage, company officials cited such possible developments as airway traffic monitors, operating on the radar principle, which would enable airway and airport traffic control centers to maintain a visual watch on planes in flight; automatic position recorders which would give pilots exact location information; a radio-impulse device which would warn pilots of the presence of other planes in the immediate vicinity; automatic landing devices, and a radio means of making automatic written recordings, aboard planes in flight, of information transmitted from ground stations.

United was the first airline to experiment with the reflected radio wave principle as a means of determining actual height above terrain. A modification of the same principle led to the development of radar for the location, by radio, of enemy planes and ships.

According to J. R. Cunningham, director of communications for United, the most immediate new electronic development in the postwar period will be the airline use of very high frequencies for static-free, two-way radio telephone communication between ground stations and planes in flight; for communication between planes themselves; for radio range navigation, and for glide-path landings at airports. He reported that the use of such devices should result in increased operating efficiency and dependability of schedules under all types of weather conditions.

Union Sues Continental's Denver Modification Center

Two locals of the International Association of Machinists have filed suit in Denver, Colo., for \$3,000,000 against the Continental-Denver Modification Center. Col. Harry C. Short, general manager of the Continental Air Lines-operated center, states that the suit results from a dispute as to whether or not the center comes under the Railway Labor Act calling for a 48-hour week, or under the Fair Labor Standards Act which calls for a 40-hour week.

The AAF contract provides that all wages, including overtime, be paid by the Air Forces, which has contended in the case of modification centers operated by airlines that such centers do not come under the Fair Labor Standards Act. Hence, only time in excess of 48 hours should be paid for at the rate of time and one half.

Air Line Mechanics Merge With CIO Automotive Union

The Air Lines Mechanics Association and the United Automobile Workers, CIO, have announced a merger of their organizations.

The ALMA, an independent union representing mechanics and maintenance men servicing commercial air transports, claims a nation-wide membership of 20,000 which voted three to one in favor of affiliation with the CIO union in a mail ballot conducted during August. Another independent group, Airlines Mechanics, Inc., which now is active among TWA employees, is reported to be considering affiliation with the new group.

Panagra Reports on Cargo Operation Panama-to-B. A.

In the three years since Pan American-Grace Airways began the first all-cargo operation from the Panama Canal to Buenos Aires, 3500 tons of cargo have been carried, the company reports.

For 1945 Panagra expects to transport 1,000 tons and 320,000 lbs. of mail.

Airlines Begin Flights Under Deployment Plan

Four of the five U. S. Flag lines assigned a role by the War Department in the redeployment of troops by air from coast to coast began operations on schedule August 27 with Douglas C-47 transports.

The fifth carrier, Pan American World Airways, despite press announcements, actually did not operate a single C-47 schedule, but issued a surprise announcement on August 30 that it would operate four-engined C-69 Lockheed Constellations on non-stop express flights. These flights actually began sometime during this period but details were lacking.

Northwest Airlines operated its full schedule of four trips each way between Newark and Seattle on the first day. American, United and TWA operated one each way and were adding additional flights as soon as equipment and crews could be obtained. The Air Transport Command also was operating schedules of its own until all airlines had met their quotas.

Meantime it was revealed that TWA had been flying every-other-day transcontinental schedules with Constellations on a separate contract with ATC and was establishing some new flight records non-stop. These flights began August 15, and it is understood TWA will be using Constellations, along with PAA, in the redeployment program. TWA and PAA are the first to use four-engined aircraft in non-stop service across the country.



UAL Counter Unit—Designed as scientifically as

a pilot's cockpit, United Air Lines has developed a new standard four-foot two-level half-circle counter unit for greater speed and efficiency in serving air travelers. The unit is a small ticket office in itself, perfected under the direction of Maurice L. Perry, United's superintendent of counter operation, to save time and steps for counter personnel. Working tools are within easy reach. For instance, the ticket validator and stamps are easily accessible to the counter sales agent's right hand, the telephone receiver to the left, about waist high on the inside of the counter. The telephone dial is on the counter top, convenient to the agent's right hand. Tariff books, receipts, schedules and guides are within easy reach above and below the working area.

PCA, Delta Announce Fare Cuts; Down to 4½c Level

PCA and Delta Air Corp. last fortnight announced effective dates for passenger fare cuts bringing the average fare level on each line down to the 4½ cent per mile level.

Through a Civil Aeronautics Board Special Tariff Permission, PCA's cuts, which range from 20 to 50 per cent below previous fares, went into effect Sept. 10. Delta's reductions are scheduled to be effective Oct. 1.

Several segments of the Delta system are already operating at fares below the 4½ cent level. Its lowest fare is the present 3½ cent rate between Savannah and Augusta, Ga. Between Charleston and Columbia, S. C., Delta charges only 3.7 cents per mile.

Included in Delta's reductions are: Shreveport to Alexandria, La., 12.5 per cent cut, from \$6 to \$5.25; Atlanta to Knoxville, 10 per cent cut, from \$8 to \$7.20; Atlanta to Cincinnati, 7.6 per cent cut, from \$19.50 to \$18; Atlanta to Dallas, 6.5 per cent cut, from \$38 to \$35.50; and between Dallas and New Orleans, 6.6 per cent cut, from \$24 to \$22.40.

C. E. Woolman, Delta's vice president and general manager, predicted that improved equipment and increased business would soon bring airline fares down to 4 cents per mile, with 3-cent fares "only a few years off."



The Birdmen's Perch

By *Major Al Williams, ALIAS, "TATTERED WING TIPS,"*

Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.

WHAT'LL THEY
THINK OF NEXT!



GUESS WHAT THEY DID NOW!

A bunch of engineers in charge of getting-rid-of-every-darned-unnecessary-ounce on a certain plane were sitting around brooding, one day.

Of course, anybody but an engineer could see that it was downright impossible to remove a solitary remaining gadget or to make a single fitting or part any lighter than it was. But no one dared to tell the engineers because it might have ruined a whole day's brooding.

So they sat there with long faces and went over the weight tables again and again.

Pilot—183 lbs. (he'd flatly refused to reduce) . . . radio equipment—so many lbs. . . . landing gear—so many lbs. . . . tires—so many lbs., plus 180 lbs. of air to inflate them . . .

"—hey, maybe we ought to fill 'em with helium instead of air, tee hee."

Well they did it! And knocked 154 lbs. off the gross weight!

How about that?

INSTRUMENT COURSE, Cont.

As we were saying last month, those oil instruments of yours are critical gadgets.

We can tell you all about what we do to Gulfpride Oil. We can tell you how we begin with the very finest crudes, and subject them to the most efficient refining methods we know of. We can tell you that after they've been refined we give them an extra refining treatment called the "Alchlor Process."

And we can tell you that last step gets more extra carbon makers and sludge formers out of Gulfpride than you could shake a piston at.

But while we can tell you what we do to Gulfpride, we can't tell you what your engine does to it! That's up to your oil instruments.

Your oil pressure gage, for instance, is probably indicating one of the following when it reads too high:

- Oil temperature too low.
- Oil pressure relief-spring tension too great.
- Too high viscosity lubricant.
- Defective gage.



Next month, we'll cover indications of the oil temperature gage. Meanwhile, you'll have enough time to treat your engine to fresh Gulfpride.

LITTLE KNOWN FACTS DEPT.

Here's the 3rd Little Known Facts About Well Known Planes we've run from George Clay, of Dallas, Texas!

That means that with 2 more Facts—fascinating enough to meet our lofty standards, and accompanied with proof—Perch Pilot George Clay will become a Senior Perch Pilot.

What's more, he'll be the first Senior Perch Pilot to be commissioned!

Unless someone else beats him to it, that is. Here's his 3rd accepted Little Known Fact:



The most popular light plane is stressed for more "G's"—pound for pound—than any commercial airliner!

A commission is on the way to H. R. Kensit, AMMH 1/c, Hdqtrs. Sqdn. 9-2, c/o Fleet Post Office, New York, N. Y., for:

Just the wiring in a PV-1 is more expensive than most PT's!

Lt. W. M. Bullock, LAAF, Laredo, Texas, rates a commission with:

It requires approximately 6 horsepower to retract the landing gear of the B-29's!

If you haven't got a Perch Pilot's commission yet, send us a Little Known Fact like those above.

If you have been commissioned, send 4 more Facts and we'll promote you to Senior Perch Pilot!

The address is up on top of the page, there.

Gulf Oil Corporation and Gulf Refining Company...makers of



**GULF
AVIATION
PRODUCTS**

OIL IS AMMUNITION—USE IT WISELY

FLUTTER SAYS

A pilot arrived in Moline
Before he had left where he'd been.
Interviewed, he admitted
He couldn't have did it
If he hadn't used Gulf Gasoline.



IMPORTANT NEW SAFETY DEVELOPMENT FOR THE AVIATION INDUSTRY

Everglow Luminous Safety Tape is an instantaneous source of emergency light whenever lights are out. Everglow absorbs daylight or artificial light in a few seconds and glows in total darkness to mark parachute locations, flight controls, fire extinguishers, first aid kits, door handles, protruding equipment, or bulkheads in dark recesses, and all other vital locations.

Everglow is used effectively to mark wing tips and other projecting extremities of aircraft parked on dark fields; to mark "no step" locations on wings; to mark tractors and other temporary equipment left unattended at night.

Everglow meets rigid U. S. Coast Guard specifications and is now preventing accidents and saving lives on hundreds of naval and merchant vessels. Air-minded men are enthusiastic about its use in aviation.

Rubber adhesive back makes application simple. Available in convenient rolls of one, two and four inch widths. Specially printed signs made on order. Write for full information. Use coupon below.

HALL VESOLE CO.

2350 University Avenue
Saint Paul 4, Minnesota
Please send prices and further information on EVERGLOW LUMINOUS TAPE.

Firm _____

Street _____

City _____ State _____

Signed _____

Everglow
LUMINOUS SAFETY TAPE

(Editor's Note: Since this column was written, Mr. Bramley has returned to the U. S. from foreign assignment.)

Memo to Eric Bramley:

Your last letter from Calcutta saying you had flown back to that point from China on your way back to USA was welcome news and here's hoping you'll be back here conducting this column in a short time.

Meanwhile here's some chitchat which may interest you. On my recent trip to Germany I did some high class looting in Berlin. The government buildings, considerably smashed up as is everything in Berlin, were open to all comers. So the gang of aviation writers I was with just helped ourselves. I came out with an X-ray set of Reichsmarshal Goering's teeth which I found amid the rubbish on the floor of his office. I've heard of a lot of unusual trophies but I think Goering's teeth make a wonderful display.

I was also fortunate in "buying" for the huge sum of five cigarettes a swell metal Nazi swastika inset into a big wreath and topped by a gold-plated eagle. It was a standard used in Nazi demonstrations. I had to wrap it in a dirty shirt, carry it with me to Oslo, and gave it to Tom Olsen of the Norwegian Airlines to ship home for me. It has arrived safely. This trophy, incidentally, came out of Herr Goebel's Ministry of Propaganda.

Then I was able to clear out of some of Herr and Frau Goering's personal stationery and some of Ilse Goering's personal correspondence. I haven't had it all translated yet but it seems that she got some pretty hot letters from an Oberlieutenant. I grabbed a set of Goering's formal invitations, greetings and thank you cards and a few other odds and ends.

The best pickings were in Goebbel's building. I got a few crosses of various kinds, including an Iron Cross and a cross given to German mothers for doing some extra duty for the Reich, and a set of engraved certificates given to Nazis for various honors. And one, given to German mothers for extra work, has Hitler's signature. I doubt if it is really his own, however, for it appeared obvious that Goebbel's building was a mass production factory for propaganda. I also liberated an instrument from a Nazi airplane, but top honors on this score go to Max Karant of *Flying Magazine* who kept his screw driver busy.

Flying across the Atlantic from Casablanca for the second time was a pretty routine experience. Our skipper from Casa to the Azores was affable Capt. Don Brown, of TWA who has flown about a hundred trans-Atlantic trips and likes flying the big pond. Says it's easier than flying in the U. S. Brown lives in Washington, hopes to fly on TWA's foreign routes. From the Azores to Newfoundland our skipper was Capt. Leo Wassenberg, a friend of Maurice Roddy, aviation editor of *The Chicago Times*. He was completing his 80th ocean trip. He started to fly in 1924 and joined American Airways in 1928. From 1934 to 1942 he was with Hanford Airlines which became Mid-Continent Airlines, and joined TWA in 1942. An able and experienced pilot, Wassenberg flew the air mail for Robertson Aircraft Corp. between St. Louis and Chicago in the early days. Now, 38, he soloed when he was 17. That's a lot of flying.

Fred Collins, Boeing's industrious sales manager, reported the other evening that O. C. Rickerson, United's western regional manager of operations, sets a record for range in ages of his children. "One's learning to fly and one's learning to walk," O. C. says. But Charlie Morton, the astute and wise v.p. of Curtiss-Wright Corp., can almost come up to O. C.'s record. Morton has one toddling and another flying in the service.

We saw a Wright Aeronautical Corp. ad in a recent *New Yorker Magazine* which attracted our attention. It was entitled "Flight Forum" and gave news of U. S. foreign air carriers. It was good reading and a smart advertising idea.

National Airlines recently flew an entire frozen meal from New Orleans to Philadelphia doing Chicago & Southern one better by adding floral decorations and corsages and an Absinthe Frappe. Why doesn't some airline fly in one of these Creole dinners to Washington? We fear Memphis and Philly are getting all the honors!

From Neil Berboth of Fairchild's development division comes a story which he warns may be old but he still maintains (and we agree) that it's always good for a laugh. It was a flight report which American Airlines gives out to passengers in flight. Under "Remarks" appeared: "Bolívar Shagnasty, our Mexican meteorologist, predicts 'Chile today, hot tamale.'" The report was signed by Capt. O. M. Garin, First Officer R. B. Young, and Stewardess Miss Kerrigan. Thanks, Neil.

WAYNE W. PARRISH

TRO 324481

You can get a Federal license to fly

with 1/3 less instruction

in an

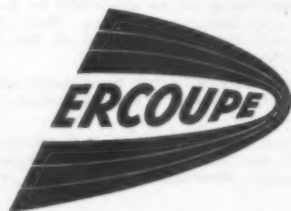
ERCOUPE

than in any other

type of plane. Why? Because it's

the *CERTIFIED SPIN-PROOF PLANE.

***Certified incapable of spinning by U.S. Civil Aeronautics Administration**



ERCOUPE'S spin-proof safety design results in simplified operation. A single steering wheel guides ERCOUPE up or down, banks and turns it left or right... makes flying easier, reduces learning time by one-third. Sturdy all-metal construction, tricycle landing gear, economical operation, low maintenance cost. For name of your dealer, write



ENGINEERING AND RESEARCH CORPORATION, Riverdale, Maryland



Osborne Clemson Shad

Executive

Lt. Col. James D. Henry, of Washington, D. C., returned to PCA (Pennsylvania-Central Airlines) as assistant to the president.

J. A. Thomas has been appointed executive assistant to John A. Collings, vice president-transportation of Transcontinental & Western Air.

Operations

Edwin J. Coe, former Billy Rose Aquacade swimmer and more recently one of Col. "Flip" Cochran's Burma command pilots, is flying as a co-pilot for PCA.

Cameron T. Robertson has returned to American Export Airlines as flight captain, following 18 months of service with the ATC at Presque Isle, Maine.

Traffic

William M. Cheatham, former traffic manager for Convair at Tucson, has been appointed district cargo supervisor in San Francisco for Western Air Lines.

Robert M. Evans, formerly associated with Kaiser Industries, has been appointed DTM of Braniff Airways at Denver to fill the position left vacant by J. K. Weckbaugh, who was recently promoted to Western Division Manager of the line.

John A. Smith, who has been regional cargo traffic manager for American Airlines in Los Angeles, has been appointed western traffic manager for National Skyway Freight Corp.

Leslie B. Osborne, former Lt. Col. in AAF in-



Scrivener Thomas F. D. Miller

telligence, has been appointed Eastern divisional traffic manager for Pennsylvania-Central Airlines.

J. J. Shad has been promoted from DTM at Houston to southern region traffic manager for Chicago and Southern Air Lines.

Robert E. Clemens, formerly chief passenger agent for Mid-Continent Airlines at St. Louis, has been appointed city traffic representative at St. Paul.

W. Sanger Green has been named general traffic manager; William Muller has become passenger traffic manager; and Arthur Cofod, cargo traffic manager of American Export Airlines.

Robert J. Murray has been appointed city traffic manager at Western Air Lines' newly established offices in Oakland, Calif.

G. L. Paris, former RCAF flying officer, has been appointed station manager for Western Air Lines in Lethbridge, Canada.

Lt. Col. John H. Clemson has rejoined TWA as general manager of the midwest region succeeding W. N. Gorham who is now director of industrial relations for TWA.

M. F. Harney has been made traffic manager at Duluth for Northwest Airlines.

Myrtle MacGinnis is the new travel agency reservation manager in Chicago for Eastern Air Lines.



Harney Henry Johnson

Miscellaneous

Ivan Bullof has become tour promotion manager for Pan American Airways.

Stuart A. Cameron formerly on the public relations staff of the National Association of Manufacturers and with the Eldean organization, which directs public relations for the Airlines Committee for U. S. Air Policy, has been named manager of American Airlines' news bureau.

Dr. Emerson Day has been appointed medical director of TWA's Intercontinental Division succeeding Dr. R. Bretney Miller who has returned to private practice.

Eloy Scrivener has been named advertising manager for the Atlantic Division of Pan American World Airways, and Marjorie Lundberg has become public relations representative for the division.

Stan Johnson has been promoted to director of advertising and publicity for Continental Air Lines.

Francis D. Miller, formerly a lieutenant commander in the Navy, has been named director of sales training for American Airlines.

Clark M. Kee, for 12 years with American Airlines as airway engineer, has joined Airways Engineering Consultants, Inc., of Washington, D. C. Prior to joining American Airlines, Kee was engaged in airway and airline construction and operation in central and south American countries.

PCA Hopes to Reactivate Knoxville-Norfolk Route

PCA's Vice President J. J. O'Donovan announced last fortnight that his company hopes to be able to reactivate its Knoxville-Norfolk Route 51, suspended since shortly after Pearl Harbor, by Oct. 15.

O'Donovan said that two DC-3s recently allocated to PCA will make the resumption possible. PCA has applied for the Civil Aeronautics Board permission necessary to permit reopening the route.

The definite date for resuming the service, said O'Donovan, depends upon the receipt of the DC-3s and the time required to reconvert them to airline use.

Braniff Has 20% Vets

More than 20% of Braniff Airways' male personnel are now veterans of the second World War returned from active duty under a policy of giving employment preference to veterans, the company reports. Most of them are newcomers to commercial airlines.

Northwest Airlines Completes Alaskan-Aleutian Operation

Northwest Airlines announced last fortnight that it had completed its Alaskan-Aleutian operation contract with the Air Transport Command and that the service has been taken over by Army pilots after being operated by the airline for three and one half years.

During that period, company officials reported, Northwest flew a total of 21,559,469 transport miles, 164,814,621 passenger miles, and 44,977,183 ton miles. The route extended in its longest phase, from Minneapolis, St. Paul to Attu in the Aleutian Islands, and at one time three daily round trips were operated between those terminals.

Cut Honolulu-to-Washington Time

Flying time from Honolulu to Washington, D. C., was sheared to 17 hours and 21 minutes early this month when a stripped-down B-29 set this new mark in a non-stop flight. The plane, departing from Guam, carried film and other records of the Jap homeland occupation.

Chicago & Southern Makes Realignment of Personnel

Chicago & Southern Air Lines has announced a number of promotions and new appointments in company personnel. Raymond G. Blair has been named dtm for the Chicago office, succeeding William R. Gillen. John J. Shad, Houston dtm, has been advanced to the office of southern region traffic manager. Philip W. Parker, Jr., has been named city traffic manager at Shreveport, La., succeeding Forrest Campbell. Robert D. Campbell, C & S traffic representative, has been promoted to supervisor of schedules and statistics at the company's Memphis general offices.

Gerald W. Davidson is the new supervisor of reservations procedures. Joseph A. Dousard has been named chief traffic dispatcher, succeeding Davidson. Frances McLaughlin has been appointed chief clerk in the company's traffic department at its general offices.

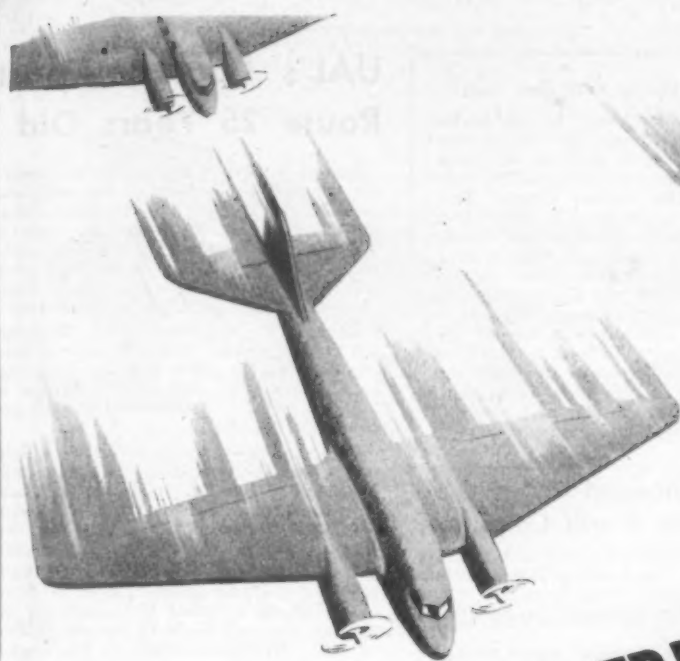
The company has established two divisions in flight operations. L. D. "Hap" Anderson will supervise the Chicago-New Orleans route as divisional chief pilot. The Detroit-Houston route will be supervised by divisional chief pilot Victor L. Hoganson. Both men will be under the superintendent of flying, Reed Knight.

George E. Koeller has been named assistant to W. G. Gabehart, superintendent of stations.

Batten, Barton, Durstine & Osborn, Inc., of Chicago has been retained to handle the company's advertising.

Six Airlines Experiment With Radar

Six U. S. air carriers are now testing the Army's low altitude (radar) radio altimeter, it has been learned. The instruments were obtained from the Army by Aeronautical Radio, Inc. with two each being assigned to United Air Lines, Eastern Air Lines, American Airlines and Transcontinental & Western Air, and one each to Northwest Airlines and PCA. The tests are being conducted to determine whether the Army instrument has any practical application for commercial air transport.

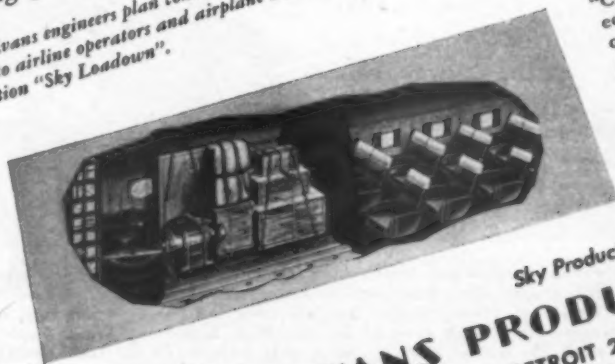


JOB INSURANCE FOR TRANSPORT PLANES

Evans Sky Products *insure* a transport plane's ability to take on more jobs and more *kinds* of jobs. A plane equipped with Evans Sky Products can carry passengers or a tremendous variety of cargo or *both*, on the same flight . . . and *without* structural alteration. And because it can be changed quickly to take practically any offered payload . . . passenger or freight . . . it stays "in the air" earning revenue more hours per day.

The war-spurred development of Evans Sky Products increases their value a hundredfold to peacetime Air Transport . . . and promises the air traveling public and shippers of air-cargo more flexible, more *useful* flying service.

Evans engineers plan constantly for greater progress in Sky Products . . . and their services are always available to airline operators and airplane manufacturers. Write for the latest issue of the illustrated, informative publication "Sky Loaddown".



"Cutaway illustration" of a Skyloader-equipped plane which can be changed quickly from a cargo-carrier to a passenger-carrier or to a combination of both. This is only one of many ways in which Evans Sky Floors, rod-and-hook tie-downs, rope hook tie-downs, pull-jacks, Sky Chairs, and other Sky Products can "multi-purpose" a transport plane.

Sky Products Division

EVANS PRODUCTS COMPANY

DETROIT 27, MICHIGAN



EVANS DETROIT PLANT FLIES
ARMY-NAVY "E" POBMAINT

Many AAF Personnel Want Aviation Career

On the basis of questions answered by 8,000 men in the Army Air Forces, 33 per cent want to remain in aviation.

This was disclosed by Major General Ralph Royce, commanding general, Army Air Forces, Personnel Distribution Command, at a conference attended by 800 delegates representing government, business, education and labor at the Santa Ana, California Army Air Base. The conference was sponsored by the Los Angeles campus of the University of California.

This was General Royce's summarization of the cross-section question:

What type job do you intend to seek? Jobs connected with aviation, 33 per cent. Of these, 25 per cent want to stay in the Army; 13 per cent want to fly with airlines; eight per cent want to be test pilots, instructors or flying salesmen; 10 per cent to be air line or factory administrators; five per cent to own their own schools or small airlines; balance, undecided specifically.

Of those wanting post-war education, General Royce said 19 per cent want to study aviation.

In answer to a question as to whether they wanted to go to work or to school after discharge from the Army, 48 per cent of the 8,000 men said they wanted to go to work, 20 per cent said they desired full-time school, 21 per cent part-time school and work, and 11 per cent were undecided.

Asked what wage or salary was expected, answers were: Officers: \$250 a month and by 10 years \$350 a month. Enlisted men: \$177 a month and by 10 years \$275 a month.

APL Helping Vets Get Jobs

Charter members in 19 states have enrolled in the Air Power League's plan to assist in obtaining civil employment for aviation veterans of the armed forces. This activity was disclosed in connection with the organization of Air Power Clubs in a number of communities. The clubs seek development of airports, airparks and flying activities, as among other community projects.

League members who already are assisting air veterans in finding suitable employment are operating informally through contacts with business organizations and corporations in their communities.

NAL Authorized to Serve New Bern, North Carolina

National Airlines last fortnight received Civil Aeronautics Board authorization to serve New Bern, N. C., as an intermediate point on its New York-Miami Route 31.

The Board's decision stated that National was the applicant best suited to provide the north-south service which was found to be required for the North Carolina seaport town. Service to New Bern by Eastern Air Lines, the other applicant, would require additional flight miles, the opinion declared, and would constitute an unnecessary duplication of National's existing service along the Carolina coast.

Action on Eastern's application to serve New Bern and nearby Wilmington as points between Raleigh, N. C., and Charleston, S. C., on Route 6, however, was deferred by the Board on the ground that additional service to New Bern from the West was more properly a consideration to be handled in the Southeastern States Case (Docket 501 et al.).

UAL's Coast-to-Coast Route 25 Years Old

United Air Lines this month is observing the 25th anniversary of the establishment of the country's first coast-to-coast route (now United's Route 1). One of the interesting sidelights on the anniversary is the fact that of the four pilots who made the first transcontinental flight on Sept. 8, 1920, only one is alive today.

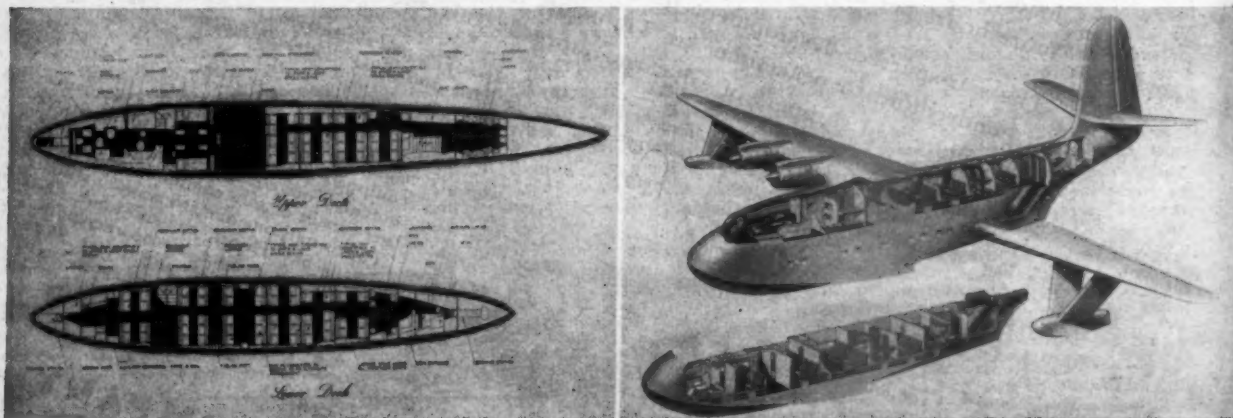
He is James P. Murray, now Washington D. C., resident vice president of Boeing Aircraft Co., who flew from Chicago to Clarence, Ia., and from Clarence to Salt Lake City. The flight was made entirely by daylight.

Other pilots to participate were Randolph G. Page, who flew the New York-Chicago leg; John P. Woodward, Salt Lake City-Reno, and Edison Esadore Mouton, Reno-San Francisco. In all, the first transcontinental flight took 82 2/3 hours.

United said that Page died in April, 1940, of natural causes, after a flying career which included pilot work for the Stimson Co., and the Ford Reliability Tour in 1927. He was a native of Washington, D. C.

Woodward was killed in the same month in which he participated in the first transcontinental mail haul by air. His plane hit Sherman Hill, near Cheyenne, Wyo., presumably while still in the employ of the Post Office Department as an air mail pilot.

The War Department reported that Mouton died July 5, 1940, but did not specify the cause of death. Mouton became a pilot during World War I, and in 1919 did his first commercial work for Durant Aircraft, Oakland, Calif. He was an air mail pilot from Sept., 1920-June, 1927, becoming an airport engineer for the CAA in the latter year. He held the rank of major in the Army.



Postwar Mars Still Bigger—The postwar commercial Martin Mars, shown here as a passenger transport, will be even bigger than the present JRM Navy version, according to the Glenn L. Martin Co. It will have a gross take-off weight of 175,000 lbs., 30,000 lbs. more than present models, and will carry 52.5 percent of its total weight in useful load as a cargo ship, 48.1 percent as a passenger transport. It will be powered by four Pratt & Whitney Wasp Major engines developing more than 3,000 hp each, and will have a top speed of 251 mph at 6,500 ft. As a cargo transport, it will take the 22,000 lb. payload which the original Mars carried 2,410 miles and transport it 3,550 miles at 180 instead of 170 mph. At two-thirds rated power, it will be able to move 50,551 lbs. of payload 2,076 miles at 204.5 mph; 36,712 lbs. 3,000 miles at 208 mph, and 12,692 lbs. 4,650 miles at 213 mph. Cargo volume will be increased from the 2,970 cu. ft. of the original prototype to 4,010 cu. ft. The passenger version shown here will carry at least 83 seated passengers, or about two-thirds that number in berths on its two decks. A combination passenger and cargo version will also be available.



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Air travel, too, depends upon General's Top-Quality...extra-safety...unchallenged 30-year reputation for quality tire leadership.

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Memoirs of a Clock-watcher

Editor's Note—On one of Washington's hot and humid summer days we had a bright idea. What with faster transport speeds coming up soon, we wondered what problems would arise from the pilot angle. Would the transition be difficult? Would much additional training be necessary? Will today's pilots be able to handle with ease transports operating regularly at above 300 miles per hour? So we wrote to Capt. Bob Dawson, one of United Air Lines' top pilots. After the elapse of some time, Capt. Dawson brought forth an opus. What he has written hasn't the vaguest relation to our questions—but it makes fine reading. We gather that as far as Bob is concerned, even 1,000 miles an hour is just another clock-watching job.

By CAPT. BOB DAWSON

A LITTLE DIAL on the instrument panel of airplanes has consumed a lot of my attention these past 25 years. They call it the airspeed indicator—although the first ships I flew didn't have such an interesting gadget. Watching that hand climb from practically nothing through the degrees until now it's due to hit 300 mph has taken pretty much the entire 25 years. But it's been worth it.

One hot afternoon 25 years ago I was bumping along over a road between Morrison and Stillwater, Oklahoma, in an old OX-5 Standard. I looked down and saw a Ford coupe going my way pass by underneath. That was hard to take—automobiles had no right to pass airplanes. True, I was bucking a head wind; nevertheless, I resented it. The cruising speed of my ship was, maybe, 45 miles per hour if the ship was in good shape—but it was never in good shape.

A few years later I took a job flying mail for NAT. It was quite a thrill when I first crawled into the cockpit of that Douglas mail plane. I sat down on my first parachute, looked over the impressive instrument panel, and listened to my first radio through the ear phones in my helmet. I felt pretty important when I yelled "contact" to the mechanics. I was excited when I opened the throttle and heard the deep-throated roar of that big Liberty motor up in front, felt her power pull me across the field and lift me up into the sky, and watched the hand of the first airspeed indicator I had ever seen settle down and point to 90 mph. But even at that speed I was to learn that head winds could keep me flying all night between New York and Cleveland.

In time, other mail ships came along, with funny round engines named after insects that have quite a sting—"Wasps" and "Hornets." They flew farther and carried a bigger load of mail, but the hand on the airspeed indicator was stuck around 90 mph. Ford put three of these Wasps on a big shiny metal airplane, and passengers were invited to fly almost any place that was worth going to, but the airplane did not go three times as fast. The hand on the airspeed indicator still settled down in about the same place but hung on a little higher when we landed.

The three engines made more noise, burned more gasoline, carried more mail, occasionally some passengers, and we carried our own coffee. Oh yes, it took two of us to fly it.

Then someone out on the West Coast changed things around a bit—he took off one of the engines, put the wing on the bottom instead of the top of the

cabin so the passengers couldn't see the ground, and hid the wheels when the ship got into the air. He put more seats in the cabin, more horsepower in the engines, more blades on the propellers, more gasoline in the wings, more instruments in the cockpit, and the airlines put one more in the crew—a lady. We carried more coffee, too. But the most important thing about this ship was that the hand on the airspeed indicator pointed to 160 mph, and until Hitler and Hirohito changed the schedule, it flew non-stop from New York to Chicago with ease. Not only that—we found that with the use of a calculator we could correct the speed indicated by the hand on the airspeed indicator for 160 to 195 true at 12,000 feet.

This was it—the last word. This was air travel—fast, comfortable, and dependable.

People got mad when those "furriners" started shooting up the world. There was a cry, "This is an air war, so we have to build faster and better airplanes." They sure did, too. Some of them were funny looking. They tried the engine back behind and the tail out in front. Some of them took the tail off entirely; others cut out the fuselage; and still others took off the engines and propellers and shot fire out of the tail. They put warts and boils all over the thing, stuck guns out of the windows, put big holes in the belly to drop all sorts of things on the enemy, and the other day I saw one with the gasoline tanks clear out on the tips of the wings. Maybe that's where they should have been all of the time. Anyhow, some of the fellows that have been flying these fast ones say it makes you dizzy to watch the hand on that airspeed indicator go round like the knob on the little old house back in my childhood.

But the DC-3 is still hanging around just under two hundred and doing an awful lot of work.

When I was barnstorming down in Oklahoma some years ago we spent quite a spell in Ponca City. The restaurant we patronized specialized in good-looking waitresses. When we arrived in town, they had just gotten some new uniforms. They were cut short and cute in the style of the day, and every time they were laundered they got shorter and cuter. One day after we had been there some time we were sitting at the table, and I was dreaming of home. I guessed my partner was too, so I said, "What do you say, Jack, let's pull out tomorrow." After awhile he said in a sleepy sort of way, "Let's just stay for one more wash day."



New MCA Label—This new insignia now appears toward the rear of the fuselage of Mid-Continent Airlines planes. It was brought out by MCA's public relations department in connection with a general overhauling of the company's public relations practices.

What has that story from my long, long ago to do with airspeed indicators? Well, I have seen the speeds of airplanes double three times since I started flying. It was fun and exciting to fly each new ship for awhile; then it was as commonplace as before. I just want to stay around for one more good increase in speed. I want the thrill of flying an airplane with a lot more of everything—including passengers—and I want to see that hand on the airspeed indicator read somewhere around 300 mph and get used to flying from New York to Denver non-stop—until it becomes as commonplace as one more wash day.

Merger of Routes 3-69 Asked By Northwest in Application

Northwest Airlines has applied to CAB for consolidation of its Routes 3 and 69 to form a single transcontinental to be known as Route 3, and for the removal of the local service restriction on Route 69 east of Milwaukee. This latter alteration, the company says, will mean that it will no longer be required to operate excessive schedules over the lightly traveled portions of the Minneapolis/St. Paul-New York route in order to give the more heavily travelled segments adequate service.

The route consolidation, the application states, will eliminate technical difficulties in operating a transcontinental service over two separate routes, and will place Northwest more nearly on a competitive parity with the other transcontinental carriers. If granted, the consolidation would probably permit non-stop service between New York and Seattle. Northwest also applied to add Cleveland and Buffalo as stops on its Route 69.

New York-to-Washington

Eastern Air Lines' New York-Washington service will be stepped up Sept. 15 with the inauguration of four new daily round-trip flights. Capt. Eddie Rickenbacker, president and general manager, said that all four trips would be non-stop between the two cities. Eastern Air Lines now has a total of 23 daily passenger flights between Washington and New York, and four cargo flights. The new flights were made possible by the re-conversion of Army planes into commercial DC-3's.



If Hitler could do it again, which country would he crush first?

- England ☐
America ☐
Russia ☐

How do you rate in the AIR-Q test?

If you can answer at least three of the four questions on this page correctly, give yourself an "A" in Aviation. You're one of a steadily increasing number of Americans who realize that, in the future, "Airpower is peacepower."

Probably America. Evidence: Germany by V-E day had developed aircraft capable of reaching and destroying our homes and factories. Hitler realized too late that it was America's production genius that turned the tide. That's why, in the future, we must always be prepared for a sneak attack. *For maximum security, America must maintain an up-to-date air force.*



How many drawings were needed to design the P-51 Mustang?

100 ☐ 700 ☐ 2800 ☐

It took 2800 original drawings. Add months of wind-tunnel research, detail engineering, testing, tooling, assembly line set-ups and personnel training and you'll see why it takes more than a year to get a new airplane into quantity production. Wars can begin in a matter of minutes. That's why it's imperative that tomorrow's planes be designed today!



How many gadgets in a fighter cockpit?

55 ☐ 70 ☐ 100 ☐

100 or more is the correct answer—and, in a P-51 Mustang, they all fit into a cockpit that's only 35 inches wide! Yet pilots have no trouble finding the right "gadget" at the right time. Through constant research North American engineers scientifically group controls according to frequency of operation. Result: orderly roominess, greater pilot efficiency. *In designing, engineering and producing military planes, North American Aviation sets the pace!*



Will America's future aircraft be:

- Rocket-Powered? ☐
Jet-Propelled? ☐
Propeller-Driven? ☐

All three answers are correct—provided we continue development of improved aircraft. North American Aviation engineers are constantly working with new and wonderful aeronautical ideas. They know that *when the aircraft industry is through making changes—it's through!*

North American Aviation Sets the Pace

DESIGNERS AND BUILDERS of the P-51 Mustang fighter, the B-25 and PBJ Mitchell bomber, the AT-6 and SNJ Texan combat trainer. North American Aviation, Inc. General Offices, Inglewood, California. Member Aircraft War Production Council, Inc.

Examiner Favors Competition on Pacific Routes

Northwest, Pan American
Recommended for Routes

By DANIEL S. WENTZ, II

A CAREFULLY calculated plan to institute the principle of competition in trans-Pacific commercial air transport operations, designed to provide at the same time the best possible service from any point in the United States to the Orient, was set forth last fortnight by Civil Aeronautics Board Examiners Ross I. Newmann and Lawrence J. Koster in a report on the Pacific Case.

For Northwest Airlines they recommended a route cutting north from New York and Chicago across Canada and Alaska to Tokyo, Shanghai, Hong Kong and Manila. For Pan American Airways they suggested the award of route extensions necessary to complete its 'round-the-world' system through a connection with the European leg at Calcutta. The accompanying map shows the recommended routes in detail.

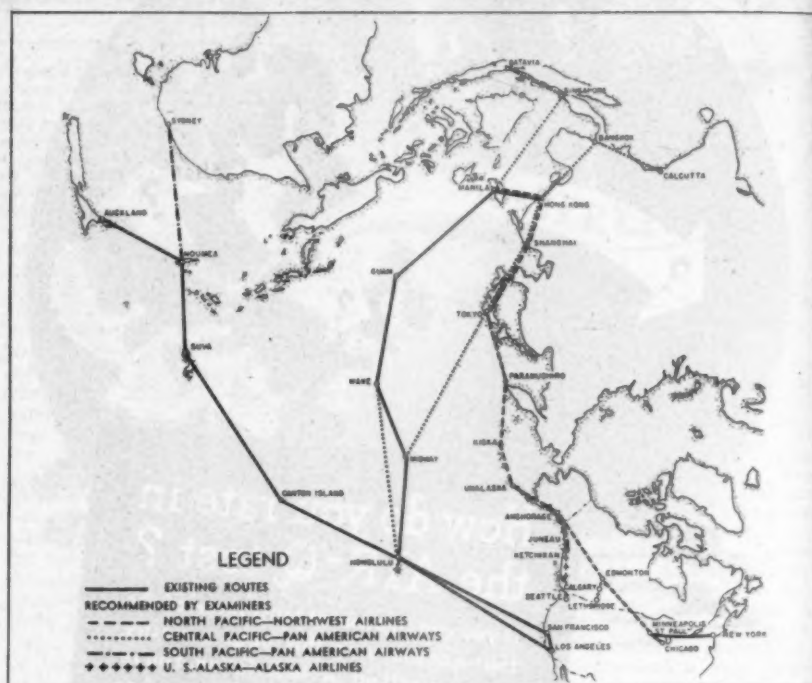
The competition they propose is not parallel except for the Tokyo-Shanghai-Hong Kong-Manila segment. Here Northwest's route would parallel for a distance the proposed extension of Pan American's system from Midway to Tokyo, Shanghai, Hong Kong, Bangkok and Calcutta. The Northwest leg between Manila and Hong Kong, if authorized by the Board, would parallel PAA's existing route between those points. Free from competition are recommended extensions of Pan American's system from Manila to Singapore and Batavia; from Noumea to Sydney; and non-stop service between Honolulu and Wake Island.

North Route Shorter

The wide separation between U. S. terminals—New York and Chicago for Northwest; San Francisco and Los Angeles for Pan American—serves a dual purpose in the examiners' overall plan. It recognizes, in the first place, that geography makes the journey of a New York-Tokyo traveller more than 1500 miles shorter via the northern route than via the Central Pacific, while on the other hand, the Californian can reach the Orient more quickly by hopping the Pacific islands. In the second place, such a division would tend to equalize naturally the traffic flowing over each company's route. Northwest would attract traffic from New England and the Northeastern states; PAA would serve passengers originating west of the Mississippi; and each carrier should be able to obtain sufficient revenue traffic to support its operation.

Evidence in the case, said Newman and Koster, shows that Pan American's Central Pacific route will "need considerable strengthening if it is to compete with the North Pacific route for traffic to the Orient. The potential traffic across the Central Pacific, they found, clearly does not warrant parallel operations by two carriers.

The extension of Pan American to Tokyo and Shanghai is designed to pro-



tect the route against undue diversion which might result if these points were served only via the North Pacific. This, said the examiners, would establish "two competitive trans-Pacific American-flag carriers serving primarily entirely different areas in the United States but affording service to and from the same intermediate and terminal points in Asia. Thus an American traveller from any part of the United States could be assured of comparable service to the principal traffic centers of Asia, and the former barriers of time and distance would disappear. Both the North Pacific and Central Pacific routes would then be on a competitive basis, with equalization of fares practically assured, and the travelling public would obtain the full benefit of regulated competition."

Middle western residents would be given a choice of routes through the examiner's proposed extension of Western Air Lines Route 52 from its present terminus at Lethbridge, Canada, to a junction at Edmonton with Northwest's Chicago-Anchorage-Orient route.

The North Pacific route, the examiners stated has several advantages other than the mileage savings it makes possible. Numerous airport and airway facilities easily adaptable for commercial use, are already in existence along the route, constructed for the wartime operations of the military air services. The highly-publicized bad weather in Alaska and the Aleutians, they admit, has built up a psychological fear in the public mind, but they point out that no existing weather problem has not been licked by the military air services. The elimination of long over-water hops should be a distinct operating advantage. Finally, they point out that the northern

route is required by the national defense.

The selection of Northwest to operate across the northern track was based chiefly upon that line's background of experience accumulated in conducting war-time operations over a large portion of the proposed route between the U. S., Alaska and the Aleutians. PCA's application was rejected because its lack of this experience outweighed the traffic generating advantages of its extensive domestic route system. As to the remaining applicant, TWA, the examiners stated that "in view of the authorization of TWA in the North Atlantic requiring a major expansion of that company's finances and personnel, it is not believed that it should be certificated across the Pacific as well." Inauguration of trans-Pacific services, they added, would be considerably easier for Northwest because it already has numerous experienced personnel in flight maintenance and administrative work.

Northwest Favored

The examiners' selection of Northwest followed the suggestion of Public Counsel Merle P. Lyon, V. Rock Grundman and Russell Bernhard, who earlier advanced that view that if TWA were certificated across the North Atlantic (as has since been done), Northwest should receive the North Pacific route. Assuming the United Air Lines is certificated between California and Hawaii as has been recommended by other CAB examiners, and the present recommendation of Northwest is accepted by the Board, all four trans-continental will then be authorized to expand their U. S. systems to include overwater operations.

Newmann and Koster suggested that the certificate for Northwest be issued for

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WINTER —Snow clearing.
SPRING —Landing area
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material hauling.

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with underbody maintenance
blade as recently purchased
by city of Muskegon, Michigan.*



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OF FOUR-WHEEL-DRIVE TRUCKS



FWD Model SU

a seven-year term, as was the case with the new route certificates issued by the Board in its North Atlantic decision, and that the extensions proposed for Pan American be likewise limited.

They quoted the Board's North Atlantic opinion as a basis for their determination that the public interest requires that Pan American be given Pacific competition. They point out that the new extensions they recommended for PAA will make it dominant in the Central and South Pacific area, and that the northern route should therefore be given to a competing carrier.

Service to interior China on the North Pacific route, they said, can be provided more easily and logically through connections with the China National Aviation Corporation (CNAC), a Pan American affiliate, than through authorizations to a U. S. flag carrier.

The report also covered various applications for improved service between the United States and Alaska, a service vital to the development of the territory which is practically inaccessible by other forms of transport. The North Pacific route from Chicago via Alaska, the examiners believe will accommodate much new U. S.-Alaska traffic. The recommended extension of Western Air Lines' from Lethbridge to Edmonton, will feed additional traffic into the Chicago-Alaska route and will provide a direct connecting service to the Territory for residents of Texas, Kansas, Oklahoma, the Dakotas, Nebraska, Montana, Utah, Wyoming, Colorado, Arizona and New Mexico.

The selection of Alaska Airlines to offer competitive service between Alaska and Seattle, the report stated, is of tremendous importance to Alaskan development. This carrier, with its extensive route system in the territory, can provide much more direct and connecting service than could Pan American, the present operator, or any of the U. S. airline applicants.

Alaska Would Benefit

The United States, the examiners remark, could do without improved transportation to Alaska without suffering any significant loss; but the reverse aspect is greatly different. Thus they found that greater developmental efforts, and consequently greater benefits to Alaskan, would derive from the choice of a native carrier rather than a U. S. line.

As between Alaska Airlines and Woodley Airways, the two Alaskan applicants, the examiners chose Alaska because, with its present system "it can render the greatest amount of one-carrier services in Alaska. They recommended that certain restrictions against local service be placed in Alaska Airlines and Pan American's certificates to protect Woodley against diversion within Alaska.

They also suggested that three of the five certificates under which Pan American now operates between the U. S. and Alaska be consolidated into a single route, redesignating Juneau and Whitehorse as intermediate points and naming Seattle and Fairbanks as terminals; and that the certificate be amended to include Anchorage as an intermediate point between Juneau and Fairbanks with a restriction on Fairbanks-Anchorage local traffic.

Applications recommended for denial were those of TWA, PCA, Pan American (northern route), Hawaiian Airlines, Ltd.; U. N. Airships, Inc.; Woodley Airways, and United Air Lines (U. S.-Alaska).

Matson Brief Asks Explicit Policy Statement from CAB

Steamship Applicant Gives Tip-off as to Argument

Foreshadowing the line of argument its attorneys will probably adopt in oral argument in the Hawaiian Case, the Matson Navigation Co., a steamship applicant for a U. S.-Hawaii route last fortnight asked the Civil Aeronautics Board to make an explicit statement of policy regarding its attitude toward surface carrier applicants for air routes. The request was contained in Matson's final brief before oral argument.

"If it is the policy of the Civil Aeronautics Board to deny all steamship company applications for permission to institute overseas air services regardless of the merits of the cases presented by the shipping companies, the Board should in fairness account that policy frankly," Matson declared.

The shipping firm charged that Examiners Thomas L. Wrenn and Lawrence J. Kisters, after finding Matson "fit, willing and able" to operate air services between Honolulu and the mainland, and after declaring that nothing in the Civil Aeronautics Act specifically prohibited a steamship company from entering the air transport field, nevertheless recommended that Matson's application be denied and that the route be granted to United Air Lines.

"If there has ever been or can ever be a case where under the most restrictive interpretation of the Civil Aeronautics Act a certificate should be granted to an applicant also engaged in the steamship business, this is it" the brief asserted.

Service Without Subsidy

The shipping company also claims that it is the only applicant willing to provide the service without Government subsidy. It views air service as a logical extension of its previous shipping activities—an evolutionary change "no greater than was that from sail to steam."

Matson characterized the examiners' suggestion that United be certificated for the route as "an ideal situation for a newcomer in the field to find a traffic developed at another's expense, to find facilities for its accommodations provided at another's expense." Matson has made large investments in developing Hawaiian tourist travel, and is the owner and developer of many of the Island's tourist facilities.

Reports from the West Coast indicate that Matson is endeavoring to enlist public support in its fight for the trans-Pacific route. A company official told Portland, Ore., newspapermen recently, that under the examiners' recommendations the Pacific Northwest might be squeezed out of overseas services if Matson's application is refused. Several civic groups in the San Francisco area are reported considering resolutions urging that steamship companies be allowed to enter air transportation.

Northwest Airlines, another U. S.-Hawaii applicant, is also working hard

in favor of a route linking the Pacific Northwest with Hawaii. The necessity for this route has been tremendously increased by the war, it believes. Adequate communication and supply lines, giving all parts of the United States equal access to our outlying territories are urgently required so that Hawaii may be made an integral part of the United States, Northwest's brief declared.

The company pointed out that if the Seattle-Honolulu route is not established, passengers from the northwestern states will face two undesirable alternatives: they will be forced to travel far out of their way to California to board a Honolulu plane, or the traffic will flow to foreign flag carriers because of the ease of making connections at either Vancouver or Victoria, B. C.

Proposed Changes to Part 61 Submitted by ALDA President

A draft of proposed changes to Part 61 of the Civil Air Regulations has been submitted to T. P. Wright, Civil Aeronautics Administrator by A. W. Dwyer, president, Air Line Dispatchers Association, 1452 Oneida St., Denver 7, Colo. The main purpose of the proposals would be to limit the number of hours a dispatcher could work in a day, week, month or year similar to the limitations now placed on airline pilots; to provide for the maintenance of training and instruction programs by the air carriers; and to provide that a dispatcher make a round trip over the route or part thereof which he is to serve during the 90 days previous to dispatching any aircraft over such route, with at least one succeeding trip in each 12 month period. Hours would be limited to 40 in any one week, 160 in a four week period and 2,000 in a calendar year, with special rest provisions where the dispatcher served for more than eight hours during any 24 consecutive hours.

Pogue Warns Military Not To Rush Into Airline Operation

Civil Aeronautics Board Chairman L. Welch Pogue, participating last fortnight in a discussion broadcast over station WHN, New York, as part of the "Congressional Record—On the Air" program, cautioned that war veterans hoping to break into commercial aviation should not underestimate the difficulties involved.

"It is not possible to say flatly," declared Pogue, "that it is or is not practicable for a war veteran to apply for an airline, authorization. That depends on his financial resources, his ability to organize a competent operating staff, the traffic possibilities of his proposed route, and other business risks involved. On the one hand the veteran should have every "break" but it would be no favor to mislead him into thinking that airline operation is simple."

CAB Proceedings

(A Summary of Applications Filed, Orders Issued, and Future Actions of the Civil Aeronautics Board.)

Orders:

- 3755—Consolidating a portion of the application of Jim Dodson Air Service in Docket 1955 with the Additional Service to Bethel and Nome Case (Docket 865 et al.). The severed portion has been assigned Docket number 1999.
- 3756—Consolidating the applications of Northern Airways (Docket 1928) and Jim Dodson Air Service (Docket 1987) for approval of the transfer of the certificate of convenience and necessity held by Harold Gillam.
- 3757—Consolidating applications of Jim Dodson Air Service (Docket 1955) and Lon Brennan Air Service (Docket 1982) with the Fairbanks-Nome Intermediate Points Proceeding (Docket 1973 et al.).
- 3777—Permitting Eastern Air Lines to serve Philadelphia on Routes 5 and 6 through the use of the Southwest (Municipal) Airport.
- 3778—Approving an agreement between United Air Lines and Mid-Continent Airlines relating to the lease of a station and other facilities by United to Mid-Continent at Kansas City.
- 3779—Permitting the Air Transport Association of America to appear as amicus curiae in the economic investigation of Trans-Marine Airlines, Inc. (Docket 1967). ATA will be permitted to appear in oral argument and to file briefs before the Board.
- 3780—Withdrawing from the Great Lakes Area Case and the Middle Atlantic Area Case applications of Associated Truck Lines, Inc., and restoring both applications to their original docket (No. 1267) to be heard at a later date.
- 3781—Withdrawing from the Middle Atlantic Area Case an application by Van Dyke Airport Service, Inc. (Docket 1318); dismissing the portion of the application which requests scheduled service; and deferring for later hearing the remainder of the application which seeks authorization for non-scheduled services.
- 3782—Withdrawing the applications of Braniff Airways in Dockets 1798 and 1948 from the Mississippi Valley Case and the Great Lakes Area Case respectively, and reassigning both applications to the original Docket 1798. Chicago and Southern's application in Docket 1681 also withdrawn from the Mississippi Valley Case.
- 3785—Permitting TWA to operate non-stop between Detroit and St. Louis on Route 58. (Docket 1715)
- 3793—Permitting Delta Air Corp. to operate non-stop between Monroe, La., and Dallas, Tex., and between Dallas and New Orleans on Route 24.
- 3794—Authorizing the Cities of Cincinnati and Lima, Ohio, the City of Nashville, Tenn., and the Tri-City Airport Commission serving the Cities of Saginaw, Bay City and Midland, Mich., to intervene in the Great Lakes Area Case. (Docket 535 et al.)
- 3795—Dismissing the applications of Dayton & Western Ohio Airlines, Inc. (Docket 1427), and Cincinnati & Lake Erie Transportation Company et al. (Docket 1792) at the company's request. Both had been previously consolidated with the Great Lakes Area Case (Docket 535 et al.)
- 3796—Notifying Braniff Airways that the national defense no longer requires delay in the inauguration of service between Tulsa and Memphis on Route 15.
- 3797—Authorizing United Air Lines to conduct non-stop operations between Fresno and Sacramento, Calif., on Route 11. (Docket 517)
- 3799—Approving an agreement between Braniff Airways and Pan American Airways relating to the air-conditioning of Braniff's planes at Brownsville, Texas. Agreement C. A. B. No. 418.
- 4000—Approving an agreement between American Airlines, Mid-Continent Airlines, Eastern Air Lines, Chicago and Southern Air Lines, and Transcontinental & Western Air relating to the management of the Lambert-St. Louis Airport. Agreement C. A. B. No. 391.
- 4001—Approving an agreement among the carrier members of the Air Traffic Conference of America relating to resolution of the Air Traffic Conference providing for a proration of costs for maintaining Air Mail Field Post Offices. Agreement C. A. B. No. 262.
- 4002—Approving interlocking relationships resulting from the holding by Sidney Maestre of directorships in Transcontinental & Western Air and in the Missouri-Kansas-Texas Railroad Co. (Docket 1724)
- 4003—Dismissing complaints of Northeast Airlines and PCA against passenger tariffs filed by American Airlines, Eastern Air Lines, Northwest Airlines and United Air Lines.
- 4004—Consolidating the application of Columbian Airlines, Inc., (Docket 1963) with the Great Lakes Area Case (Docket 535 et al.)

Applications:

- Des Moines Gulf Airways, Inc., Des Moines, Iowa, for a route between Sioux City and Houston, Tex., via Des Moines; Chillicothe, Sedalia and Springfield, Mo.; Little Rock and Hot Spring, Ark.; and Shreveport, La. (Docket 2011).
- Eastern Oregon Airways, La Grande Municipal Airport, La Grande, Ore., (a partnership of Keith L. Province and Merlin W. Johnson) for a route between Boise, Idaho, and Portland, Ore., via Ontario, Baker, La Grande and Heppener, Ore. (Docket 2007).
- Essair, Inc., for a route between Houston, Texas and New Orleans via Beaumont, Port Arthur, Texas, Lake Charles, Lafayette and Baton Rouge, La. (Docket 2006).
- Espresso Aereo Inter-Americano, S. A., Havana, Cuba, for a permanent or temporary foreign air carrier permit to authorize scheduled or non-scheduled operations carrying passengers, Cuban mail and express between Havana and Miami. (Docket 2012).
- Gaillard, Green Rayner; Ethridge, George Morris; and Broach, Walker, Jr.; application for routes between Meridian, Miss., and Memphis, Nashville, Birmingham, Pensacola, New Orleans and Jackson, Miss. Gaillard's address is 7812 Stratford Road, Bethesda, Maryland; Ethridge is stationed at NAS, Quonset Point, R. I.; Broach lives in Meridian, Miss. (Docket 2001).
- Northwest Airlines, for amendment of its certificate for Route 69 to add Cleveland as an intermediate point between Detroit and New York. (Docket 2016).
- Northwest Airlines, for amendment of its certificate for Route 69 to add Buffalo as an intermediate point between Detroit and New York. (Docket 2017).
- Northwest Airlines, for consolidation of its Routes 3 and 69 into a single route to be known as Route 3, and for removal of the existing restrictions on flights serving points east of Milwaukee on Route 69. (Docket 2018).
- PCA, for the permanent inclusion of Clerksburg and Morgantown, W. Va., as intermediate points on the carrier's Route 55. (Dockets 2009 and 2010).
- South Air Freight Express Company, for a Chicago-New Orleans route via Nashville. Scheduled mail and property service using C-47s is projected. The agents of the company, which is still under formation, are Edward J. Aylward and H. Max Ammerman, Investment Building, Washington, D. C. (Docket 2004).
- Transairways, Inc., 255 Haver Road, Dayton, Ohio, for six feeder routes totalling 3,500 miles to provide airmail and express pick-up service to more than 200 communities in Washington, Oregon and California. (Docket 2019).
- Transcontinental & Western Air, for amendment of its certificate for Route 61 (Washington-Dayton) or for a new route to provide service between Washington and Detroit via Pittsburgh and Cleveland. (Docket 2014).
- Trans-Marine Airlines, Inc., 1775 Broadway, New York, for a route between Rochester, N. Y., and Chicago via Buffalo, Erie, Cleveland, Toledo, Detroit, Grand Rapids and Milwaukee, over which scheduled mail, passenger and express service utilizing flying boats—possibly including the PB5M Martin Mariner—is planned. (Docket 2003).
- Trans Ohio Airlines, Inc., Citizens Bank Building, Bellefontaine, Ohio, for a temporary or permanent certificate covering scheduled mail passenger and express service between: Toledo and Huntington, W. Va.; Cleveland and Cincinnati; and Cleveland and Columbus, all via various intermediate points. (Docket 2013).

New Air Services

Twin Cities-to-Northwest

In a move to accommodate the increasingly heavy flow of passengers on its transcontinental system, Northwest Airlines announced that it will add two more daily round trips between Minneapolis-St. Paul and the Pacific Northwest in mid-August when an additional 21-passenger DC-3 airplane, recently allocated to the company by the government, will go into regular service. Croll Hunter, president and general manager, said west coast-bound traffic converging at the Twin Cities from Chicago on

one segment of the company's route network and from Milwaukee, Detroit and New York on another, has created a partial bottleneck at Minneapolis airport during the last two months. To relieve this condition, the airline will add one daily round trip between the Twin Cities and Seattle-Tacoma and another between the Twin Cities and Portland.

Washington-Rehoboth Beach

Maryland Airlines, charter service which has applied to CAB for a certificate for scheduled flights has announced inauguration of passenger service between Washington and Rehoboth Beach, Del. The announced passenger rate is \$8 plus Federal tax, and time of the trip is cut from six hours and 10 minutes by road to 43 minutes. Stops are made at Easton, Md., and Georgetown, Del., and the line hopes to expand its service to link all major cities on the Delmarva peninsula with Washington, Baltimore and Wilmington.

United Adds 4 Flights

Achieving an all-time high of 120,865 miles flown daily, United Air Lines has inaugurated two more daily round-trips between Chicago and San Francisco plus two daily round trips between Denver and Cheyenne. The latter service was temporarily suspended in 1942 because of wartime equipment shortages. The new services represent a total air mileage of 8,500 miles of flying daily. With this addition, United now is operating 20 round-trip flights daily between Chicago and San Francisco in addition to 16 round-trips daily between Chicago, Cleveland, New York and other Eastern points.

Northwest Adds Two

Northwest Airlines added two more daily round trips between Minneapolis-St. Paul and the Pacific Northwest on Aug. 10 when an additional 21-passenger DC-3 recently allocated to the company by the government, went into regular service. The airline added one daily round trip between the Twin Cities and Seattle-Tacoma and another between the Twin Cities and Portland. Addition of these flights will raise the total of west coast flights to seven, the largest number ever operated by Northwest Airlines over its far west routes.

Trans-Canada Services

Trans-Canada Air Lines has inaugurated an additional fourth daily flight from Montreal to the Maritime Provinces. W. F. English, vice president, states "The rate at which additional schedules will be added now and in the near future depends on the availability of flight crews." Trans-Canada has hired former RCAF pilots as first officers to train for captaincies and is holding classes for other veterans as radio operators, passenger agents and traffic representatives.

NWA to Wenatchee

Restoration of service which was curtailed during wartime when the Army requisitioned half of the airline's fleet of airplanes, will go forward another step when Northwest Airlines resumes flights this week into Wenatchee, Wash. There will be one flight daily in each direction.

Tulsa-to-Memphis

The Board has notified Braniff Airways that considerations of the national defense no longer require any delay in inaugurating service between Tulsa and Memphis on Route 15. Intermediate points to which Braniff is also certificated include Muskogee, Okla., and Fort Smith and Little Rock, Ark. Braniff has announced that it will open the service in October.

TWA-Arizona Airways Joint Petitions Poses New Problem

No Hard Assets Involved In Proposed Route Sale

THE JOINT APPLICATION last fortnight of Transcontinental & Western Air and Arizona Airways, Inc., for CAB approval of the sale of TWA's Route 38 to Arizona Airways, presented the Board with a previously untested question of policy. It marked the first time any carrier proposed the sale of a route certificate to another without any hard assets being involved in the deal.

There have been previous route sales proposed and completed with CAB approval, but in each case, real estate or other properties were included as considerations with the actual certificate of convenience and necessity for a route. In the present instance, the Board's decision will probably set an important policy on the cash value of route certificates.

Arizona Airways is a corporation formed by H. O. Nelson, Douglas Robinson, and James E. McElowney, who are also engaged as co-partners in the Air-Safe Company, distributors for parts of Arizona and Nevada for the Ercoupe.

In return for the certificate for Route

38, TWA would receive, under the terms of the proposed sale agreement, 5000 shares of Arizona Airways \$10 par common stock and \$50,000 par value of an undesignated preferred stock. TWA would sell its \$50,000 common, and the preferred stock would be retired from a fund set up through the allocation of 25 percent of Arizona Airways net profits.

Arizona Airways present articles of incorporation authorize 10,000 shares of stock, of which 1725 fully paid up shares have been issued and are outstanding. H. O. Nelson presently owns 1311 of these outstanding shares.

Arizona will seek amendment of its corporate charter to permit the issuance of a total of 10,000 shares of stock in order to complete its agreement with TWA. The sale agreement also provides that the total interest of the Air-Safe Co. in Arizona Airways shall be maintained at 31 percent, and that the interest of TWA may be maintained at 20 percent if the company desires.

Route 38, for which TWA holds a "Grandfather" certificate, extends from Phoenix, Ariz., to Las Vegas, Nev., via Prescott and Kingman, Ariz. The route has not been served since the passage of the Civil Aeronautics Act.

December 3 Tentative Date For Middle Atlantic Case

CAB Examiners Charles J. Frederick and Richard A. Walsh, in a prehearing conference report in the Middle Atlantic case (Docket 674 et al) have set Dec. 3 as the tentative date of hearing, with Nov. 1 as the deadline for the exchange of exhibits and Nov. 20 as the time for exchange of rebuttal exhibits.

The examiners have decided that the scope of the proceedings shall comprise a geographical area described generally as including the States of New York, Pennsylvania, New Jersey, Delaware, Maryland and the District of Columbia. Through service between Washington, New York and Boston will be considered in the proceeding, contrary to an earlier announcement of the examiners. Applicants requesting consideration of non-scheduled operations have been requested to delete such requests from their applications.

West Coast Case Date Set

The Board has set Oct. 8 as the date for oral argument in the West Coast Case (Docket 250 et al.) Applicants and Public Counsel have been allotted one hour for their presentations, not more than 15 minutes of which may be reserved for rebuttal. The order of presentation will be: American Airlines; Coast Aviation Corp.; Los Angeles Airways, Inc.; Nevada Pacific Airlines, Inc.; Northwest Airlines; The Ryan School of Aeronautics; Southwest Airways Co.; TWA; United Air Lines; West Coast Airlines, Inc.; Western-Inland Air Lines; and Albert L. E. Zimmerly.

CAB Mileage—Traffic, Operating Revenue, and Expense Statistics

May, 1945 and May, 1944

June, 1945 and June 1944

OPERATING REVENUES																			
	Passenger	Mail	Express and Freight	Total	Total Operating Expenses	Net Revenue from Operations	Miles Scheduled	Scheduled Miles Flown	Percentage	Total Passenger-Miles	Revenue Passenger Load Factor	Mail Pound-Miles	Express Pound-Miles						
All American	1945	\$ 589,234	\$ 9,644	\$ 604,921	\$ 675,399	\$ -70,478	1,535,558	89.27	92.87	137,242,247	89.27	137,242,247	26,974,367	1944					
American	1945	33,449,880	6,142,334	3,187,519	43,506,401	33,152,743	10,353,658	43,429,043	94.30	693,097,536	90.02	26,762,745,058	14,058,381,363	1944					
Braniff	1945	23,873,787	5,630,548	2,431,910	32,578,494	25,249,061	7,329,433	29,709,549	94.43	473,898,363	89.87	19,205,870,978	9,835,218,417	1944					
Caribbean Atl.	1945	3,703,155	701,455	175,846	4,708,456	3,879,214	829,274	4,633,362	93.90	76,324,930	92.37	2,341,521,639	632,644,131	1944					
Chi-Sou	1945	147,678	170,801	141,981	356,160	325,006	16,183	164,130	99.48	1,519,929	75.98	16,419,628	16,419,628	1944					
Colonial	1945	3,058,809	300,827	141,981	3,561,869	3,251,006	310,863	4,263,038	93.04	66,607,432	78.41	1,014,704,309	654,876,074	1944					
Continental	1945	1,909,032	277,973	95,335	2,322,802	2,416,994	-94,182	2,408,600	91.51	38,971,592	85.77	921,213,845	393,257,077	1944					
Delta	1945	1,128,975	133,804	19,368	1,315,082	1,338,129	-23,047	1,469,356	91.95	21,775,028	74.82	116,253,994	84,587,969	1944					
Eastern	1945	704,382	140,759	22,193	885,486	880,918	4,570	751,420	94.38	13,350,079	82.94	106,555,126	68,416,965	1944					
Hawaiian	1945	1,547,670	635,195	34,725	2,244,391	2,244,116	-275	Data not available due to carrier's delinquency in filing Form 2780 report for June 1945.						1944					
Inland	1945	807,262	698,048	8,255	1,537,545	1,417,990	119,555	1,946,606	92.29	17,712,731	85.59	241,074,329	57,280,126	1944					
Mid-Continent	1945	3,968,596	724,371	92,067	4,893,272	3,410,773	1,482,499	4,880,845	95.49	85,767,274	87.57	2,515,185,027	443,274,346	1944					
National	1945	2,493,269	504,196	66,373	3,139,942	2,497,984	641,976	2,941,706	94.16	52,403,491	90.37	1,728,708,125	292,268,216	1944					
Northeast	1945	17,980,819	2,692,154	1,059,191	22,064,843	14,824,401	7,242,442	Data not available due to carrier's delinquency in filing Form 2780 report for June 1945.						1944					
Northwest	1945	12,087,356	2,730,671	701,186	15,887,859	11,384,423	4,503,436	14,715,376	95.67	229,375,569	87.89	9,306,276,627	2,883,972,394	1944					
Penn-Central	1945	1,379,515	10,371	380,822	1,872,960	1,434,031	438,929	567,021	99.57	17,919,675	94.16	48,173,377	1,105,068,778	1944					
TWA	1945	1,164,406	10,920	366,365	1,557,277	1,297,479	259,798	14,572,334	94.01	14,572,334	94.01	49,198,326	1,049,931,462	1944					
United	1945	638,617	570,842	4,557	1,279,121	1,268,308	10,813	1,632,390	96.50	14,166,647	69.31	114,438,423	20,658,444	1944					
Western Air	1945	220,504	331,435	1,679	564,726	547,442	17,284	1,096,120	85.94	5,052,971	69.48	75,003,268	5,338,680	1944					
W. Coast	1945	1,307,642	922,758	26,681	2,274,326	2,120,915	153,411	2,644,800	96.19	28,095,252	73.83	503,613,732	105,601,935	1944					
W. Gulf	1945	751,347	764,933	15,624	1,546,550	1,297,079	249,471	2,034,706	96.87	17,487,812	67.75	412,106,162	55,123,877	1944					
W. Ind.	1945	2,588,040	326,580	49,581	3,016,922	2,836,959	179,963	4,711,073	96.14	58,247,175	89.60	1,109,985,163	210,839,130	1944					
W. Pac.	1945	1,429,435	215,118	26,414	1,700,872	1,780,718	-79,846	2,601,913	97.19	31,118,302	86.70	587,399,400	139,787,544	1944					
W. S. Atl.	1945	949,417	311,208	11,618	1,280,344	1,410,673	-130,329	1,561,220	83.95	19,850,630	65.15	81,639,278	45,710,744	1944					
W. S. Atl.	1945	639,563	313,478	9,299	971,430	1,054,877	-83,447	1,111,236	80.64	12,111,442	58.55	57,922,534	27,186,285	1944					
W. S. Atl.	1945	7,634,208	1,554,093	323,609	9,663,931	9,030,635	633,296	9,837,640	96.20	163,258,413	85.79	5,283,838,619	1,628,918,320	1944					
W. S. Atl.	1945	3,965,156	1,345,268	259,276	5,731,147	5,059,112	672,035	5,673,673	96.73	84,869,855	85.17	4,597,858,181	1,007,198,896	1944					
W. S. Atl.	1945	7,422,837	420,574	326,033	8,269,258	7,006,905	1,262,353	8,714,591	91.27	132,691,303	79.67	1,418,442,846	1,450,548,673	1944					
W. S. Atl.	1945	3,720,646	329,123	227,747	4,366,768	3,997,427	369,359	3,875,496	93.63	63,072,329	82.60	1,128,268,214	825,742,713	1944					
W. S. Atl.	1945	20,866,144	7,451,238	2,086,341	30,857,292	23,029,374	7,827,918	28,483,161	91.52	446,011,827	91.17	26,378,536,728	9,204,341,465	1944					
W. S. Atl.	1945	13,815,537	4,558,355	1,408,663	20,198,323	17,621,969	2,576,354	18,353,955	94.38	285,576,496	90.65	15,839,095,081	6,041,844,749	1944					
W. S. Atl.	1945	24,345,981	12,555,898	2,215,519	39,285,316	26,651,090	12,634,226	35,577,255	94.57	524,023,217	95.80	41,552,467,570	10,002,306,496	1944					
W. S. Atl.	1945	17,760,299	7,680,710	1,886,768	30,078,993	22,283,622	7,794,471	25,040,206	96.47	407,347,675	95.09	27,091,096,585	7,995,002,575	1944					
W. S. Atl.	1945	3,684,690	680,825	117,780	4,707,824	4,037,952	669,874	4,412,975	97.00	77,692,807	88.07	2,321,136,700	531,296,781	1944					
W. S. Atl.	1945	2,028,722	298,122	105,983	2,522,504	2,465,302	57,202	2,499,134	95.76	42,464,609	86.14	1,040,603,493	441,128,552	1944					
TOTAL	1945	137,806,289	36,375,898	10,315,925	187,561,563	143,245,728	44,315,835	186,047,664	94.03	2,850,184,705	88.63	123,332,642,437	44,956,642,306	1944					
	1944	73,244,659	27,057,448	7,829,559	131,055,259	105,864,070	25,191,189	121,250,163	94.90	1,867,248,509	89.50	84,823,427,397	31,774,789,336						

CAB Makes Policy Statement On Non-Stop Air Operations

Opinion Accompanies Its Decision on TWA's '58'

THE Civil Aeronautics Board issued last fortnight the first comprehensive policy statement it has ever made concerning non-stop operations, presenting an historical review of the practice and an analysis of the economic regulations governing it. The Board's opinion accompanied a decision authorizing Transcontinental & Western Air, Inc., to operate non-stop between St. Louis and Detroit over Route 58, the old Marquette route.

The main issue in non-stop cases, the Board made clear, is whether or not the proposed operation is adverse to the public interest. The opinion stated that there is no requirement in the Economic Regulation governing non-stops, in the carrier's certificate, or in the Civil Aeronautics Act "that a proposed non-stop service must involve an 'improvement' of an existing service."

Each carrier's certificate of convenience and necessity for a given route, said the Board, contains authority for permitting the airline to operate non-stop between any two points not consecutively named in the certificate. The Board has placed only one limitation on the carrier's exercise of this authority—it requires that the non-stop shall not be adverse to the public interest.

Certificate Gives Privileges

When any proposed non-stop flight appears to CAB to constitute a "substantial departure from the shortest course . . . as determined by the route described in the certificate," it may require the airline to show, in public hearings, that the public interest will not be "adversely affected" if the non-stop is operated.

Because the certificate itself gives each carrier non-stop rights, these proceedings before the Board are not "in effect" new route cases, as has frequently been claimed, and the carrier is not, therefore, required to prove that the public convenience and necessity require the particular non-stop service in question.

To obtain CAB approval of a proposed non-stop, the carrier must show only that it will not be "adverse to the public interest by reason of the substantial departure" from the route laid out by the certificate. "If for example," the Board explained, "the benefit to the travelling public does not exceed the damage to the public interest caused by diversion of business from the existing carriers, the service should not be authorized."

In the actual case in question, TWA had asked permission to fly non-stop between Detroit and St. Louis, the terminals of the old Marquette route. TWA's previous service between these points was over a 525 mile combination of routes via Dayton. The new service gives TWA a 461-mile non-stop routing, 64 miles shorter than the previous service and 58 miles less than American Airlines Detroit-St. Louis service via Chicago.

In opposing TWA's Detroit-St. Louis non-stop, American Airlines contended

that TWA had actually been operating between those points via Dayton rather than Cincinnati, a service involving a combination of Routes 2 and 58. American argued that because of this two-route service, the proposed non-stopping of Dayton was a device for bypassing the junction point of two routes and would in effect, result in an entirely new route bisecting territory not previously served by TWA.

This argument, said the Board was without merit. The combination service TWA has been operating has no bearing on the non-stop service it proposes to operate. Inasmuch as Detroit and St. Louis are both points in TWA's certificate for Route 58, the carrier has a clear right to operate non-stop between these points. If Dayton and Detroit were the termini of Route 58, the Board added, TWA's proposal would then involve a non-stop operation between points on different routes and public convenience and necessity would have to be proved.

Air Services, Inc. Asks Hearing on Application

Air Services, Inc., a non-scheduled charter flight company which before the war conducted sight-seeing flights over Washington, D. C., last fortnight applied to the Civil Aeronautics Board for early hearing and decision on its application for a "Grandfather" certificate of convenience and necessity for which it applied in October, 1938. The application for a non-scheduled certificate was the first to be filed under the Civil Aeronautics Act. (Docket 56-401-E-1).

The petition filed states that Air Services, Inc., has repeatedly sought to have its Grandfather application heard by the Board, and asserts that CAB's delay has, in effect, denied the applicant due process of law. The certificate it is seeking is described as a very valuable property right of which the company is being deprived because of the Board's non-action.

Airline Pilots Leaving Services Favored by CAR

Former airline pilots who have been on military service will benefit by a Special Civil Air Regulation promulgated by CAB last fortnight, providing means whereby they may renew their route competency requirements upon returning to commercial service.

The regulation provides that "any first pilot who on or subsequent to December 7, 1941, was qualified as such and as competent over a regular or alternate route and who has been employed as first pilot in military air transport operations will be considered competent over such route after completing over the route either (a) one one-way trip as first pilot accompanied by a check pilot or (b) two one-way trips as second pilot." The special regulation terminates Mar. 1, 1946.



New Examiners—During the past fortnight the Civil Aeronautics Board appointed J. Earl Cox (left) and Frank Trelease to its staff of examiners. Trelease was formerly Assistant Secretary of All American Aviation, Inc. A graduate of Colorado University, he has practiced law in Denver and has been a member of the faculty of the University of Wyoming School of Law. Cox has just completed a three year period as a trial examiner for the Federal Trade Commission, where he served as examiner on the Willys Overland Jeep case which received wide newspaper publicity. Prior to joining FTC, Cox had practiced law in Akron, Ohio. He is a graduate of the University of Chicago.

EXCELLENT OPENING FOR RADIO SALES ENGINEER

LEADING national concern with headquarters in Southern California has opening for Sales engineer experienced in mobile radio communication systems. VHF and/or airline experience desirable. Graduate electrical or radio engineer preferred. Does not have to be a design engineer but should be able to analyze requirements and recommend proper equipment. Please state qualifications and salary desired. Enclose recent snapshot.

BOX 447 AMERICAN AVIATION
American Building, Washington 4, D. C.

CERCA Moves Toward Standardization of Radio

Organization Hopes To Become Adviser to PICAQ

By H. J. BROWN

Superintendent of Communications, Australian National Airways

THE Commonwealth Empire Conference on Radio for Civil Aviation (CERCA) met in London last fortnight and reached substantial agreement on communication and radio navigational facilities looking toward international standardization.

CERCA's findings are to be presented to the provisional International Civil Aviation Organization, and it was proposed to make CERCA an international advisory body to PICAQ in an effort to speed standardization.

Although the London meetings applied essentially to the British Empire, a group of U. S. observers, headed by Charles Stanton, deputy administrator of CAA, took an active part in the discussions.

Communications-wise, CERCA agreed to eliminate MF and to recommend VHF voice as the chief means of communication between aircraft and ground and other aircraft wherever possible. MCW transmission on VHF was added for use only where language difficulties make it desirable.

The conference agreed on the need for a radar distance indicator in transport aircraft, and for short range navigation it was held that omnidirectional ranges were desirable.

Although some controversy arose over the relative merits of CW and radar techniques, it was held categorically that radar would give an answer which was practically independent of site so far as accuracy was concerned and that this could not be said for CW systems.

Airport control radar with primary and secondary indication and responders in the aircraft also was favored by CERCA, but the conference reached no conclusions on collision warning nor long-range navigational devices, primarily because of lack of equipment.

Australia hopes to bring the communications and navigations plan into general use within the next three or four years.

The frequency band for VHF equipment was set down as 108 to 132 mc's, split up into five parts for localizers, ranges, ground-to-air, company communications simplex and air to ground. Channel spacing was agreed upon with the 100 and 200 kc's spacing being accepted in preference to the 90 and 180 kc's used by the RAF.

CERCA also recommended that HF equipment be carried as standby or for use where VHF would not give continuous contact, as in the case of long ocean crossings. The band 2-18 mc's was suggested.

Thus airport control and airway control where stations can be spaced at about 150 miles intervals along the route, fall into the VHF band. Equipment nearing the pilot model stage in England makes use of all the work on miniature components developed over the past few years and consequently present a step forward in compactness and weight reduction. A 12-channel VHF set complete and suitable for duplex operation was seen weighing only 20 pounds total.

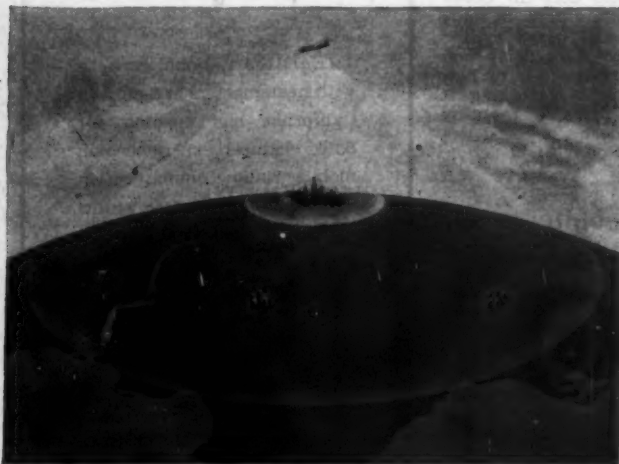
With respect to radar distance indicators in aircraft, Australia, Canada and Britain all have produced experimental models and carried out flight tests. They operate in this manner:

A meter indication gives continuous indication to plus or minus a quarter mile or plus or minus 2%, whichever is greater, of the distance of the aircraft

from a selected ground beacon within range. Various methods for distinguishing between a number of ground stations within range are possible; different repetition frequencies or different spacing between double pulses while the same radio frequency is used, or different radio frequencies, or a combination of repetition and radio frequency. The band 200 to 225 mc's is being used at present but it is visualized that 100 mc's may be used in the future. The set is supplied with an additional facility enabling the aircraft to orbit around the beacon at any preselected radius. This is provided by a knob and second meter. The radius of orbit is chosen by the knob and the aircraft is flown to keep the needle of this second meter on central zero. The aircraft will then fly on a circle around the beacon. The accuracy is about 1/4 mile in radius. One model demonstrated was coupled into an electric auto pilot which then relieved the pilot of flying on the meter. This has many applications in instrument flight and gives the possibility of horizontal stacking when icing conditions make vertical stacking undesirable. The weight of the equipment being tried experimentally is about 22 lbs. complete.

Arguments over radar vs. CW omnidirectional systems hinged primarily on the cost of changing over from CW systems, which are almost in existence, or from VHF 4 course ranges which could be converted at a small cost to make them omnidirectional. There seemed to be little doubt that radar should be chosen for international standardization, although there is still a question on the availability of equipment and how soon the change-over can be made.

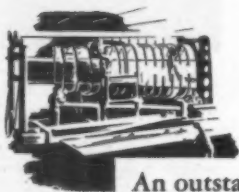
Two experimental stations were in operation in England and a similar programme is proceeding in Australia. In both cases flight trials are being carried



Navigational Hazard Eliminated—Stratovision, recently announced by Westinghouse and Glenn L. Martin, will not only increase the range and reduce the cost of FM and television programs, according to its inventors, but in addition will eliminate the need for, frequent television and FM towers which threatened to offer a serious hazard to aerial navigation. The drawing at left shows the increased coverage of a Stratovision station over the conventional tower station represented by the light shaded cone in the center. At right is an artist's conception of the Martin Stratovision aircraft which is described as being an all-metal, low-wing monoplane almost as large as the B-29 but weighing only a third as much. It will be powered with two 1450 hp engines, cruise at 150 mph and be equipped with the most modern heat anti-icing and blind landing equipment. It is expected that the Martin Co. will concentrate on the rapid development and construction of these aircraft now that the war's end has resulted in a reduction of its government contracts.

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MANUFACTURERS OF COMPLETE AIRCRAFT ASSEMBLIES

out. No site errors have so far been noticed, though the sites are far from perfect.

Compare this with the known sitting errors which have been observed on CW systems on even almost perfect sites.

One development requires three aerials on the ground at 3 miles spacing. The other system called the short based version requires three aerials at only 500 feet spacing. This is for operation on 200 to 225 mc's and it is intended later to go to 100 mc's. The short based one of course is favoured and is the latest development. The flight trials so far have proved very successful. It has reached a stage where it should be properly engineered to try out the system completely. Indication in the aircraft is given by a meter which shows the bearing of the aircraft from the ground station over 360 degrees. This is a meter similar to that used for automatic compasses. Having selected the bearing on which an approach is to be made the pilot then watches a centre zero meter which enables him to keep on the chosen course to plus or minus $1\frac{1}{2}$ degrees, i. e. the same accuracy as present two course ranges.

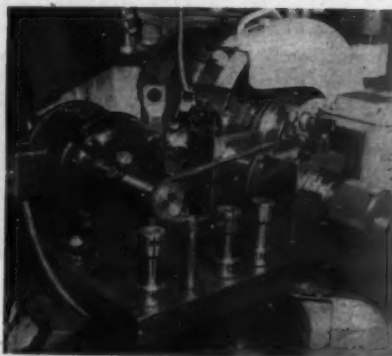
Radar is Demonstrated

Site errors do not enter because only the leading edge of the pulse received by the shortest or direct path is used. Any reflected pulses received after that have no effect since the circuit has become inoperative. The aircraft equipment will weigh about 25 lbs. complete. The ground stations are simple and relatively cheap.

Also discussed and demonstrated were primary and secondary radar and responders in aircraft. The use of a primary radar, using the same frequency for transmission and reception and depending on reflection echoes for its functioning, is well known for the display in plan position of all aircraft in the vicinity of an aerodrome. The clutter on the screen from permanent echoes does not, however, please those who are looking for thorough reliability and who try to remove the human element as much as possible. By installing a responder in all scheduled aircraft at least, the picture presented by secondary radar is completely clear of any confusing markings. Every spot on the screen represents an aircraft. Secondary radar does not depend on echo reflection.

It is planned to have two receivers at the ground station. One giving primary radar indication, the other secondary radar indication. Main airline traffic can be picked out and controlled much more easily and expeditiously on the secondary indication. Private fliers or aircraft whose responders are out of order can be handled on the primary radar.

It can now be seen that the responders in the aircraft can be coded with identification, height or other data. These responders then lend themselves to an airway control system also, being triggered off by stations along the airway and the coded data received on the ground and transmitted over land line to the traffic control centre without pilot intervention.



TWA Valve Refacer—Developed in the TWA

Kansas City shops, this machine saves vital manhours by insuring greater speed and accuracy. A row of holds, shown in the foreground, keep the valve in place while it is being ground. Split up and down the sides, these holds contract when holding the valve in position, and thus insure a tighter fit for greater accuracy. The machine also features a heavy base and a large grinding wheel.

Production Begun on 'Super' Aviation Fuel, Says Davies

Production has begun on a new "super" aviation fuel of a higher grade than the standard 100-octane rating, Deputy Petroleum Administrator Ralph K. Davies announced. Almost all refineries now producing 100-octane are equipped to produce the higher grade fuel and selection of installations to participate in the new program was based on geography, available storage and similar conditions.

The new fuel will provide an increase in engine performance giving greater speed, longer range or a higher load factor, Davies stated. Most high speed combat planes can use the new fuel by making adjustments in carburation, supercharging and other changes of a similar nature requiring no major changes in existing engine types. However greatest performance will come from new planes not yet in combat especially designed for the new fuel.

Northwest Announces New Adjustable Aircraft Seat

Northwest Airlines announces a new type of adjustable airplane seat which features a hydraulic back adjustment. Notchless, it can be stopped in any position and can be changed from one angle to another with slight effort. The seat has lowered arm rests, removable cover, and simplified floor clamp.

The new seat, lighter than the old type, is reported to be the result of researches into comfort for air travelers, extending over several years and directed by Northwest Airlines engineers in cooperation with Mayo Clinic scientists.

Simplified Tie-Down Equipment Developed

By FRANK L. DAVIS

A simplified type of cargo tie-down equipment, increasing the efficiency of loading and unloading operations in cargo-carrying aircraft, has been designed by the Davis Cargo Ty-Down Division of Utah Radio Products Company, according to Frank L. Davis, originator of the equipment.

Now being flight-tested by NATS and several commercial airlines, the Davis Ty-Down gear sets consist of a 15-foot length of two-inch cotton webbing with a dural hook at each end, and an adjustable quick-release and take-up buckle between them. The hooks can be fastened to floor-eyes, or other securing points, or to additional lengths of webbing where longer lengths are required. The webbing, reaved with several plies through the buckle, acts as a block and tackle, enabling a man to get a double purchase and to cinch down a load firmly. Two men, each exerting a pull of 150 lbs., can effect a pull of 600 lbs. on the Ty-Down.



The webbing can be adjusted to any length by pulling it through the buckle to shorten it, or by hooking one unit to another to increase the length. The buckle embodies a cam-locking device which holds the webbing secure at any point. Any settling of the load can be adjusted by a pull on the loose strap near the cam.

To supplement the webbing straps, a Ty-Down blanket of heavy duck can be used. It is provided with S-hooks so that, when it is spread over several pieces of cargo, the hook at the end of a length of webbing can be hooked into the blanket at any point to pull it down. The blanket can be folded to accommodate small packages or connected by the S-hooks to other blankets, to make a single piece of any size or shape.

In the Davis Ty-Down gear, knots are entirely eliminated. Low mortality for the gear is also claimed for the quick-release mechanism removes the temptation to cut it, as is sometimes the case with rope.

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Engineering Preview

SPECULATION as to the application of atomic power to aircraft propulsion reached new heights recently when Wellwood Beall, Boeing vice president engineering, was reported to have testified to a congressional committee that Boeing had already experimented with it, and that it was the coming thing. Most engineering authorities were skeptical, but agreed that if atomic power is harnessed for aircraft use, it will be in some form of gas turbine in which uranium 235 or plutonium is used purely as a heat source. In all probability, a semi-closed cycle would have to be used to eliminate radioactive by-products of the atom splitting from the turbine proper. The biggest if of all as far as aircraft uses of atomic energy is concerned, however, still remains the cost of producing it.

North American Aviation, according to reliable reports, may still enter the commercial transport field despite previous denials. It is said to have designs for a four-engined transport on the drawing boards.

Recent publicity given high flash point safety fuels is being received with a so what attitude in many quarters. They point out that such fuels are not new, but have been held back because their disadvantages outweigh their slight added safety factor as far as normal operations are concerned. Those quoted include expense, more complicated fuel injection systems required for their use, and low power ratings. As one leading engineer put it, the 100 octane safety fuel which was recently announced will be like dishwater compared to the new fuels coming up.

Look for one of the major companies to announce a new aircraft designed specifically to meet the needs of executive transportation in the near future. It will combine high speed and a luxurious interior with the ability to get in and out of small fields.

Jet aircraft are expected to turn from kerosene to high octane aromatic fuels in the near future—in fact, the wing tanks on the P-80 are already being labelled suitable for aromatics. Reason for the switch is that while at first jet designers were thinking in terms of getting the most heat for the least possible weight, they later discovered that the laminar flow wing made cubic inches more critical than pounds in that it had only a limited amount of storage space. While aromatics give off far less btu's per pound than paraffins, when btu's per cubic inch are substituted the ratio is reversed. And don't be surprised if attempts are made to utilize pulverized carbon as a jet fuel. On a btu's per cubic inch basis it is nearly twice as efficient as the best aromatic.

Some people in the industry are wondering whether we haven't let Canada get the jump on the South American transport business with Canadian Car & Foundry's Burnelli flying wing. Only American transport which combines high loads with short landing and take-off runs to a comparable extent is the Fairchild Packet, and airline men say that its rear loading makes it impractical for anything but terminal to terminal operation. Incidentally, more and more people are asking why more hasn't been done with flying wing designs in general and the Burnelli in particular in this country.

Reports that the latest model Packard Merlins have a fuel injection system similar to the Wright 3350 are only partially correct. The Merlin does have fuel injection of a sort, but it is more correctly referred to as fuel metering, and operates on a totally different principle from the 3350's injection system.

Engineers are wondering just how much the location of the DC-8's engines in the fuselage is going to affect vibration control. One suggestion is that Vibration shock suspensions, similar to those now employed to mount Navy radio and radar equipment, could easily be adapted as engine mounts. Another question being raised in connection with the DC-8 is whether the proposed installation, in which both engines will be geared to both propellers, will meet CAA requirements for single engine operation, although it is to be presumed that Douglas already has considered this point.

Benjamin Shore, a torpedo expert, is reported in the British press to have invented a rotary internal combustion engine "capable of revolutionizing road, rail, sea and air transport throughout the world." The description given makes it sound like another gas turbine except that it is said to be "infinitely more economical in fuel consumption" than present day engines. American engineers are said to be studying the project, but as yet the NACA has received no word concerning it.

The Van Zelm alleron, which was test flown experimentally on a B-26 more than a year ago, but will be introduced to production aircraft for the first time in Martin's 202, may provide the answer to keeping landing speeds down while increasing wing loadings. It provides the same rolling momentum with a shorter span, thus permitting greater flap area.

One of the most interesting German designs revealed by recent technical missions is an aircraft with three wings spaced equidistantly around the fuselage and powered by Athodyds. Initial power to reach a speed to support the Athodyds was supplied by rockets. The aircraft stands on its tail for take-off, and is shot straight up. It also lands on its tail, thus eliminating all need for runways. The Germans also are reported to have used the Athodyds as an auxiliary power source in a Dornier 217, increasing its speed from 250 to 420 mph.

SYDNEY CARTER.



International News Photo.

Below—Cutaway view of high pressure marine boiler typical of those used on many naval and merchant ships. Tubes are mechanically rolled and expanded into headers to provide a dependable pressure joint.

Photo courtesy Combustion Engineering Co., Inc.

SEAGOING STRENGTH in FEDDERS Aluminum Oil Coolers for Aircraft

THERE can be no compromise with reliability in boilers generating the power to move Uncle Sam's naval and merchant ships. Ruggedness is equally important in vital equipment on Uncle Sam's battle planes.

Fedders uses the same proven principle of tube and header assembly in

aluminum oil coolers for aircraft as is used in high pressure boilers.

Mechanically bonded joints of unequalled strength are obtained by spinning and expanding tubes into the header plates. This operation is performed at normal room temperature. There can be no chemical or metallurgical change due to high heat.

Double wall thickness and strength are provided at every joint.

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tubes are readily replaced if damaged in service. Fedders construction eliminates necessity for plugging leaky tubes and consequent loss in performance. Tubes can be replaced in a few minutes, and face leaks repaired in a few seconds.

Fedders aluminum oil coolers have logged thousands of flying hours under all conditions of temperature and altitude.

Write for data on application of coolers to specific installational requirements.

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New Equipment

Burklyn Instant Release

Burklyn Co., Los Angeles, Calif., has announced that its instant release hinges are now available in complete sets in a wide range of sizes and non-strategic materials. Previously only the male hinge could be supplied. The instant release is made up of a bracket housing two spring-loaded attaching pins. As the pins are retracted by finger pads, the hinged part is released instantly. Applications include removable instrument panels, cowlings, inspection plates, pilot curtains, bulkheads and partitions, seats and similar items.

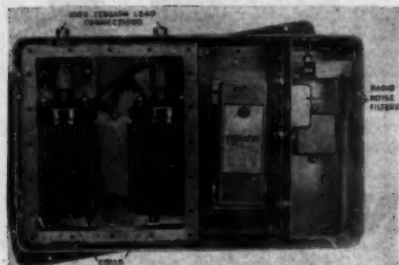


Piston Ring Inspection Kit

A piston ring inspection kit for checking aircraft engine rings is now being offered by C. Allen Pulmer Co., Cincinnati 2, Ohio. It consists of a rotary light gage pedestal, the required sizes of ring gages, a surface plate, a dial indicator reading in 1/10,000ths with its base, a pair of 1-inch micrometers reading in tenths, and a pair of 1/2-inch tubular micrometers.

Heater Spark Ignition

A new high altitude spark ignition system for Janitrol aircraft heaters which will permit them to be ignited and burn without fuel



pre-heating from sea level to 63,500 ft. at minus 67° F. has been developed by Surface Combustion Corp., and is currently being used on production C-54 Skymasters. It is said to cause no radio interference, and to reduce consumption of battery current at low starting temperatures. One unit may be used for a single heater or for two heaters in a dual installation.

Simmonds Pacitor Gage

A new electronic fuel gage known as the Pacitor gage which has been used extensively for British aircraft and is said to give greater reliability and accuracy in measuring the amount of fuel in an aircraft's tanks is now being made available for American aircraft by Simmonds Aerocessories, Inc. It is made up of a tank unit consisting of two parallel plates or pipe-like tubes with a small space between, and a power unit which generates a high frequency current by means of a single tube oscillator. With the new gage, a pilot can read the mass of fuel in his tanks within 3 per cent accuracy from a dial on the instrument panel.

Acromark Directory Board

An office directory on which names and locations of various persons or services can be easily listed is now being offered by the Acromark Co., Elizabeth, N. J. The standard

size is 24x20 ins., and the frame is of wood. Background for the interchangeable and removable names is of black felt, while letters are of a non-curling, non-fading white or red celluloid. A hinged glass door with lock and key serves the double purpose of excluding dust and dirt, and keeping control of the board in the hands of those responsible for it.

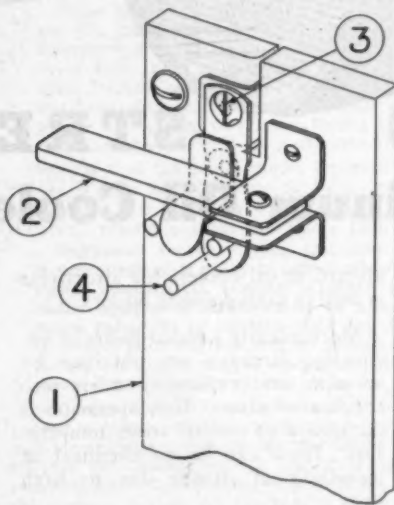
DeVries Navigation Calculator

A new instrument which is said to be able to accurately and instantly solve all navigation problems involving known variation, deviation and wind drift angle is now being offered for \$10 by De Vries & Co., Grundy Center, Iowa. Known as the De Vries Navigation Calculator, it is constructed of seven plastic discs, one upon the other, and comes complete with a leather carrying case.



Room Temperature Adhesive

Amberlite PR-113, a new resorcinol adhesive which sets at room temperature but is said to develop the joint strength, moisture resistance and durability generally associated with hot press phenolics, has been announced by Resinous Products & Chemical Co., Philadelphia. Suitable for bonding woods, laminates, rubber and transport plastics, it is especially well adapted to radio frequency gluing equipment. It is supplied in solution form and requires the use of Catalyst P-117, a dry powder, to effect cure.



Clamp Assembler—Quick assembly of electrical clamps is provided by this new tool developed at the Glenn L. Martin Co. The base (1) is placed in a vise, and the clamp is held by a slot in the base and three pins (4). A fibre arm (2) keeps constant pressure on the screw which will hold the two parts together. The nut, not visible, is then turned with an air nut runner and the head of the screw is forced automatically onto a built-in screwdriver (3) which holds it until the nut is tight.

New Fuel Booster Pump

Pesco Products Co., Cleveland 6, Ohio, has announced a new electric-motor driven, centrifugal fuel pump which is said to have more positive vapor separating characteristics under severe operating conditions than previous types. The only moving part is a direct driven impeller-rotor with tapered impeller blades on one side and shrouded blades on the other. Various models are available for both internal and external installation.



Cathode Ray Tubes

With the removal of many radar applications from security, General Electric Co., Schenectady 5, N. Y., has announced a complete line of cathode ray tubes for radar oscilloscopes and other applications. Sizes range from two to 12 in. in screen diameter, and a special glass-fused "skyscraper" construction assures rigid mounting of the electron gun within the tube.

Automatic Ball Sorter

An automatic ball sorter developed by Jack & Heintz, Cleveland, to speed its own production may well prove of value in big in-



strument maintenance and repair shops. It will automatically sort balls for bearings into as many as ten groups, each group being separated by only ten millionths of an inch. Working on an electronic principle, a single one of these machines can sort more balls than 32 skilled operators using conventional measuring equipment, according to the company.

Nupla Plastic Hammer

A new line of plastic hammers for metal forming, machinery assembling, tapping inserts into holes and other tool and die work is being offered under the name Nupla by New Plastic Corp., Los Angeles 38, Calif. The new hammers utilize a special semi-soft plastic known as Flex-O-Cryst, and are available in five sizes, two hardness grades and 29 weights ranging from 5 oz. to 6 lbs. The plastic is not affected by gasoline, oil or alcohol, and whenever the striking surface becomes worn, it is only necessary to cut a small slice off the head with a band saw and polish the edges on a sander.

New Valve Facing Alloy

A new valve facing alloy known as Eatonite which combines the corrosion resistance of valve steels with the ability of tool alloys to retain shape and hardness at high temperatures has been announced by the Wilcox-Rich division of Eaton Manufacturing Co., Detroit. It is designed to provide increased performance at high temperatures, and with high test anti-knock fuels.

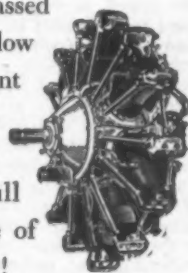


Assuring as the stars . . .

Overhead, the planets hold their place and pattern without change or chance, comforting indices for the pilot by night . . . And under the cowling, the strong, sustained power of the Jacobs is full and comforting assurance of progress and safe passage to his destination. For the Jacobs has proved itself one of the world's most reliable plane engines . . . by a decade of prewar performance for working pilots in many parts of the world, and four years of unique war experience . . .

IN THE training planes that schooled the tens of thousands of Allied Air Forces bomber pilots, the Jacobs has performed

dependably and consistently, day after day, for as much as 1,200 flight hours between major overhauls . . . set unsurpassed records for maintenance and low upkeep costs . . . despite student handling, the varied climate and terrain, and the practice takeoffs demanding more time at full throttle than any other make of plane engine was asked to give!



The new postwar Jacobs engines now in prospect for commercial transports and light planes, will even better the records of their predecessors! Inquiries invited . . . Jacobs Aircraft Engine Company, a division of Republic Industries, Inc.



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Donald Douglas Deplores Reconversion Red Tape

Mead Committee Given His Full Testimony

PEACE-TIME jobs are as important to prosperity as war production was to victory, but rapid reconversion of industry has become entangled in red tape and has bogged down in details and mechanics of contract terminations and surplus disposal.

These were highlights in testimony given by Donald W. Douglas, president of the Douglas Aircraft Co., whose plant turned out more than one-sixth of America's war plane production. Douglas' testimony was made part of the record in the Mead Committee's senatorial investigation through a transcript introduced at the hearing held in Seattle by the sub-committee on aviation and light metals headed by Senator Hugh Mitchell (D.-Wash.).

Instead of trying to make a few extra dollars on the sale of surplus tooling and facilities, the government should help create new jobs by giving manufacturers the same degree of friendly cooperation in contract terminations as they did in expansion of production at the start of the war, Douglas told the Committee.

Must Create Jobs

"America cannot trade or bargain its way into prosperity in the postwar world," he said. "New jobs, new opportunities, new products and new markets must be created. To keep workers on the job and commercial products in our plants, the manufacturers must have immediate opportunity to acquire, lease or use at reasonable cost, surplus government facilities and special tooling. These manufacturers, who did so much to create the industrial miracle of all times, should not be asked to compete with speculators and junk dealers in an effort to keep as many of their workers as possible on the job."

"Highest bids and best deals will not provide a single job in a plant that has been dismantled and closed," he testified. He also urged that the government immediately make available to the industry and to the public its full policy on disposal of surplus aircraft, "so that the manufacturers and consumers can complete their post war plans."

Leadership in technological development and a striking force powerful enough to locate and destroy enemies before the enemy can destroy us are better guarantees of safety than underground factories or plant dispersal, he declared. Douglas pleaded with the sub-committee to brush aside the red tape and legal technicalities ham-stringing the industry in its desperate effort to keep workers on the job.

"America cannot trade or auction its way into reconversion by making profit on its war surpluses," the Douglas testimony pointed out.

"Present surplus disposal regulations provide that before a war contractor can acquire government-owned special tools and equipment in his plant, he must compile for public bidding a complete list of the property and make this list

available to hundreds of outsiders, most of whom are not connected with the industry and not qualified to place them in immediate service," he added. "Not until these outside bids are received, analyzed and rejected will the government negotiate with the contractor for use of the property in producing peacetime goods and creating job continuity for his wartime employees."

Government policies, or rather the many conflicting interpretations of these policies, concerning the disposal of surplus aircraft, are an equally serious barrier to rapid reconversion, Douglas stated.

"We do not seek to bar the government from the disposing of this surplus," he continued, "but we do ask that the exact price, conditions of sale or lease, the number available, dates and terms of release on these surplus transports be made public promptly and officially so that customers and manufacturers alike can complete their own plans."

Douglas indicated that most top government officials are well aware that rapid reconversion is of the utmost national importance, but that this enlightened view had not filtered down to all representatives dealing directly with industry.

"We had hoped," the Douglas transcript continued, "that our commercial backlog, with its plans for new models and markets, would make it possible for us to retain in our employ without interruption of work and payroll a substantial portion of our wartime personnel."

"The government's insistence, however, that we strictly adhere to military production schedules until the last gun was fired and its refusal several months ago to permit even partial utilization for

peacetime reconversion of key employees working under draft deferments now forces the industry to dismiss thousands of workers who could have been usefully employed."

"We shall be obliged to continue dismissal of these highly-trained and essential war workers until we get additional military orders on models now in production or we get immediate help in solving termination problems. Peace has come as abruptly as war and we are unprepared for the one as the other," Douglas said.

In a statement to the sub-committee in which he outlined indices of expansion in the aircraft industry, Robert E. Gross, president of Lockheed Aircraft Corporation, said the figures were an indication of the magnitude of the industry's reconversion problems. "Obviously peacetime aviation will not be able immediately to support these war-expanded production facilities and the problems of reconversion are so staggering that many even despair of the industry's ability to survive," he said. "At Lockheed we do not subscribe to this pessimistic outlook. We believe the aircraft manufacturing industry can be one of America's greatest peacetime industries. However, and this is the real point, aircraft manufacturing will be just what public appreciation makes it and nothing else. The choice is one which the public must make and the hour of decision is here."

Tooling is Problem

Gross went on to say that recent efforts within the government to make possible the acquisition of tooling on a satisfactory basis have been accelerated by both the War Department and the Surplus Property Board, but no final decisions have been reached. He said Lockheed's particular problem is made exceptional by its relative simplicity growing out of the fact that Lockheed Constellation tooling, for example, is located in company-owned plants, whereas most of the recent consideration given to the tooling problem has been related to the more common situation of tooling located in government-owned plants.

Gross pointed out that because the tooling was made under the pressure of wartime emergencies, the cost of it was very high, which accentuates the problem. He said it was not possible for Lockheed or any aircraft company similarly situated to pay for wartime tooling a price anywhere near the cost of it and still be in a position to enter the competitive commercial market. Gross said he recognized that the government has a problem to reconcile the high initial cost of wartime tooling with the practical value of the tooling which an aircraft company could afford to pay.

"It is hoped that present efforts by government people to solve the problem will be successful," he declared. "It is absolutely imperative that the problem be solved or the entire United States commercial aviation may be thwarted. We believe that the government officials involved fully realize this fact that thus far have not been able to overcome the difficulties preventing a solution."

Gross also forecast planes traveling 1,000 miles an hour and discussed the

Ellinwood Industries Formed By Former President of Adel

Ray Ellinwood, who recently resigned as president of Adel Precision Products, Inc. which he founded in 1937, has announced the formation of a new firm, Ellinwood Industries, Ltd., with headquarters in Los Angeles.



Ellinwood

Associated with him in the new firm, Ellinwood said, are Robert S. Furst, who was assistant to the president in charge of post-war development at Adel; Robert Berns, a development division designer at Timm Aircraft; Carl Campbell, formerly director of purchases for Vultee Aircraft and Emil Setzler, originator of a production control system and a development and research engineer.

Ellinwood said the new firm will produce and sell materials and machines in the agricultural implement, marine equipment, business machine and home products fields especially.

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HAVE you thought much about performance of small parts in new peacetime products—and how much these parts cost?

Countless times since 1919 Weatherhead has been assigned the job of saving "a penny a part" for a manufacturer—and has solved the puzzle and delivered a finer part in the bargain. At Weatherhead this kind of thinking begins at the beginning—in the laboratory—where a steadily growing staff is trained to consider engineering, production

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components
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Amphenol Complete Cable Assemblies offer many obvious advantages—efficient assembling . . . exacting inspection . . . precision testing . . .

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possibility of huge planes transporting an entire Army over vast distances at high speeds.

"The development of atomic power and the refinements of remote control devices—together with other technological discoveries for uninhabited planes, rockets and missiles—open a field for this class of aircraft that staggers the imagination," he added.

Gross' testimony was in the form of a transcript. Representing Lockheed at the Seattle hearing were Lucien W. Shaw, director of contract termination; J. E. Canaday, public relations manager, and Ward Beman, research engineer.

Speaking bluntly of future air warfare, J. H. Kindelberger, president of North American Aviation, told the sub-committee that recent developments in the propulsion and control of air weapons point the way to radical changes in the World War II concept of military aviation. He also told the Committee that these radical developments may create "push button" aerial warfare and eliminate the piloted airplane from future military aviation.

"I believe there can be little doubt in the minds of those closest to these revolutionary new developments that the airframe industry contains today the world's greatest concentration of skills necessary to design and assemble aerodynamic bodies which are controlled while in flight," Kindelberger said.

"The dividing line between ordnance and aircraft appears to fall logically between missiles which are controlled by aiming from a launching point, and missiles which are controlled either by human hand, by radio, or by automatic detection devices while in flight.

"The intricate sciences of such flight controls, and of the aerodynamic considerations which affect them, is essentially the province of the airframe industry."

West Coast Produced 60% (By Weight) of All Fighters

West Coast Aircraft manufacturers, in successfully carrying out one of industry's heaviest wartime assignments, delivered 60 per cent by weight of all the fighting planes produced in the United States while the nation was at war.

This was announced today by Robert E. Gross, president of the Aircraft War Production Council, which has completed its mission and ended operations.

Applying the formula of industrial teamwork to multiply individual effectiveness, the Council companies—Boeing, Consolidated, Vultee, Douglas, Lockheed, North American, Northrop and Ryan—produced 1,576,841,300 pounds of airframe weight, 125,823 warplanes to carry the war to the enemy.

This was 60 per cent of the national output by weight, and 46 per cent of the unit total.

These figures represent the war effort of all plants of the seven companies, which at the peak of production operated in 16 states and had overseas operations bases from Equatorial Africa to Northern Ireland.

Pacific Coast plants alone turned out 78,554 planes, with a total airframe weight of 959,678,500 pounds. The figures include production from January 1, 1942 to August 9, 1945.

Substantial Amount in Tax Refunds Due Manufacturers

Will Help Industry Pull Through Reconversion

AN IMPORTANT ITEM to help the aircraft manufacturing industry through the reconversion period is the substantial amount of tax refunds to which these companies are entitled under the provisions of the 1945 tax bill, according to a recent study made by Hare's, Ltd., of New York.

Hare's has compiled a table showing the amount of the postwar excess profits credits reported by leading companies at the end of 1944. This table, reproduced below, shows the per share amounts of these credits, together with net quick assets per share at the end of last year:

Company	Postwar Excess Profits Credits Amount	Per Share	Net quick assets per share
Boeing	\$8,000,000	\$7.45	\$32.87
Consolidated-Vultee	2,100,000	1.52	26.36
Curtiss-Wright	16,600,000	2.24	11.53
Douglas	7,000,000	11.85	94.43
Grumman	5,500,000	10.80	38.42
Lockheed	5,700,000	5.30	27.46
Martin	8,600,000	7.65	37.26
North American	6,700,000	1.95	11.16
United Aircraft	4,200,000	1.58	27.21

Pointing out that net quick assets were above the market price of the stock at the time the study was made, Hare's emphasize that this resulted from the policy of aircraft manufacturers to retain

a large portion of their wartime earnings to place themselves in a strong position for postwar opportunities.

"The transition from war to peace entails certain problems for all war industries, and aircraft is no exception," the study states. "Already there have been cutbacks and cancellations, nevertheless, many leading aircraft manufacturers are producing plane types which the Army and Navy will continue to need for some time.

"It is significant that 10% of the wartime peak would approximate an annual production in excess of \$1,500,000,000 compared with a prewar production of some \$275,000,000 in 1939. With the removal of the excess profits tax, the substitution

of a more moderate normal tax, and the restoration of rational profits margins, the leading companies can operate very profitably on a volume of business of this size."

Howard, Convair, Republic Plants Offered for Sale

Three aircraft plants that have terminated their war contracts were offered for sale or lease by the Reconstruction Finance Corp. on Sept. 5. They were, the Howard Aircraft Corp. plant at St. Charles, Ill.; The Convair plant at Miami Springs, Fla.; and the Republic Aviation Corp. plant at Evansville, Ind.

The Howard plant occupies a landsite of 29 acres, completely fenced, four miles east of St. Charles. The site includes two parking lots of 300-car and 50-car capacities. Fourteen buildings include a mill containing 170,000 sq. ft. of floor space, a two-story office building with concrete floor and plaster walls and ceiling, and 12 smaller miscellaneous buildings. Power is supplied by government-owned lines connecting with the St. Charles Power Co. The plant has its own sewage disposal system. The property has water, power and light facilities. A railroad spur adjoins.

The Convair plant occupies a landsite of 102 acres, six miles northwest of Miami. The thirteen main buildings contain 197,000 sq. ft. of floor space and are partly air conditioned. The site contains a sewage disposal plant. Water, light and power facilities are available. The property adjoins Seaboard Airline Railroad.

The Republic plant occupies a site of 71 acres. Twenty-six buildings and two hangars constitute the production unit. Main structures are administration, assembly and manufacturing, boiler house, service, warehouse in two sections, and cafeteria. Machinery and equipment are in a number of buildings. Facilities cover sewer, water, light and heat. Two sidings from the New York Central Railroad adjoin.

Revocation of WPB Order Puts Foreign Carriers In Competitive Market

The recent revocation of Limitation Order P-47a and the amendment permitting manufacturers to apply to the War Production Board for materials and priorities for building new aircraft for foreign airlines has put these carriers on their own in negotiating for equipment with U. S. manufacturers. Before the end of the Pacific War, many foreign lines were seeking to purchase new and surplus transports through the assistance of the Foreign Economic Administration and the State Department's Aviation Division, on the basis of contributing "directly or indirectly to the war effort, or to relief rehabilitation and reconstruction."

FEA and State Department figures indicate that as of June, foreign companies had placed actual or estimated orders for 92 U. S.-built transports of over 50,000 lbs. gross weight—presumably DC-4s, DC-6s or Constellations.

Foreign carriers had asked for these types in the following quantities: ABA and SILA (Sweden)—16; ANA (Australia)—8; Cruzeiro (Brazil)—2; DDL (Denmark)—3; Dodero (Argentina)—2; DTA (France)—36; Iberia (Spain)—4; KLM (Netherlands)—16; Sabena (Belgium)—5.

Foreign carriers desired a total of 195 aircraft between 25,000 and 50,000 lbs. gross weight, and 43 transports under 25,000 lbs. gross weight.

Air Express gets New Truck in Production weeks Faster



When the Army orders new equipment — a truck, for instance — things move at break-neck speed. Blueprints, specifications and material specimens shuttle back and forth. Then come tools, jigs, dies. And it's mostly done at 3-mile-a-minute speed via Air Express.

Getting peacetime civilian products to market will also have the same kind of urgency. There's not only competition to meet but payrolls and overhead, too. Air Express is a money-saver because it's a time-saver. It is one of the most versatile of all industrial tools. It will pay you to investigate its use and economy in your business — whatever business you're in.

Specify Air Express—a Good Business Buy

Shipments travel at a speed of three miles a minute between principal U. S. towns and cities, with cost including special pick-up and delivery. Same-day delivery between many airport towns and cities. Rapid air-rail service to 23,000 off-airline points in the United States. Direct service to scores of foreign countries.

AIR MILES	2 lbs.	5 lbs.	10 lbs.	25 lbs.
250	\$1.04	\$1.25	\$1.57	\$2.43
500	\$1.11	\$1.52	\$2.19	\$4.30
1000	\$1.26	\$2.19	\$3.74	\$8.75
2500	\$1.68	\$4.20	\$8.40	\$21.00



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Brown Huested Crane

Dudley M. Steele, for eight years manager of Lockheed Air Terminal in Burbank, Calif., has resigned to devote his full time to the Acme Spring Sash Balance Co., of which he is part owner, while Robert Burns, who has been assistant manager, is acting as manager pending the appointment of a permanent successor.

James Boyce, previously acting manager of the engineering department and of Lockheed's base in Ireland, has been appointed manager of the Lockheed Service Center at Van Nuys where the company modifies PV-2's and F7's for the Navy, succeeding R. T. Mark, who has resigned to enter private business in Chicago.

Guy H. Evans, formerly the assistant export manager of Douglas Aircraft Co., announces the opening of a new service, "Airline Representation," in Los Angeles.

John E. Cregier, Jr., who has been with the San Diego division of Convair, has been made sales-service manager of Commonwealth Aircraft, Inc., to supervise sales promotion on the new Trimmer amphibian.

Charles L. Morris, formerly chief helicopter test pilot for Igor Sikorsky and author of "Pioneering the Helicopter," has been named assistant to the president of Bendix Helicopter, Inc.

C. E. Fisher, who for 15 years was connected with the Glenn L. Martin Co., will be in charge of sales on the West Coast for Robert Hawthington & Son, Inc., while L. E. Massie will direct engineering for the company.

Capt. C. E. Wildman, USNR, director Naval Air Transport Division, who was director of flight research for Sperry Gyroscope Co. before the war, has been ordered to inactive duty at his own request.

Thomas F. Gessner has been appointed assistant to J. C. Goldrick, vice president in charge of public relations for Evans Products Co.

W. L. Wells, chief engineer, transport section, Curtiss-Wright Corp., has been elected national chairman of the Airworthiness Requirements Committee of the Aircraft Industries Association. George Lescher, executive engineer, Fairchild Aircraft Division, has been elected Eastern Division chairman and C. L. Bates, chief of structures, Northrop Aircraft, Inc., Western Division chairman.

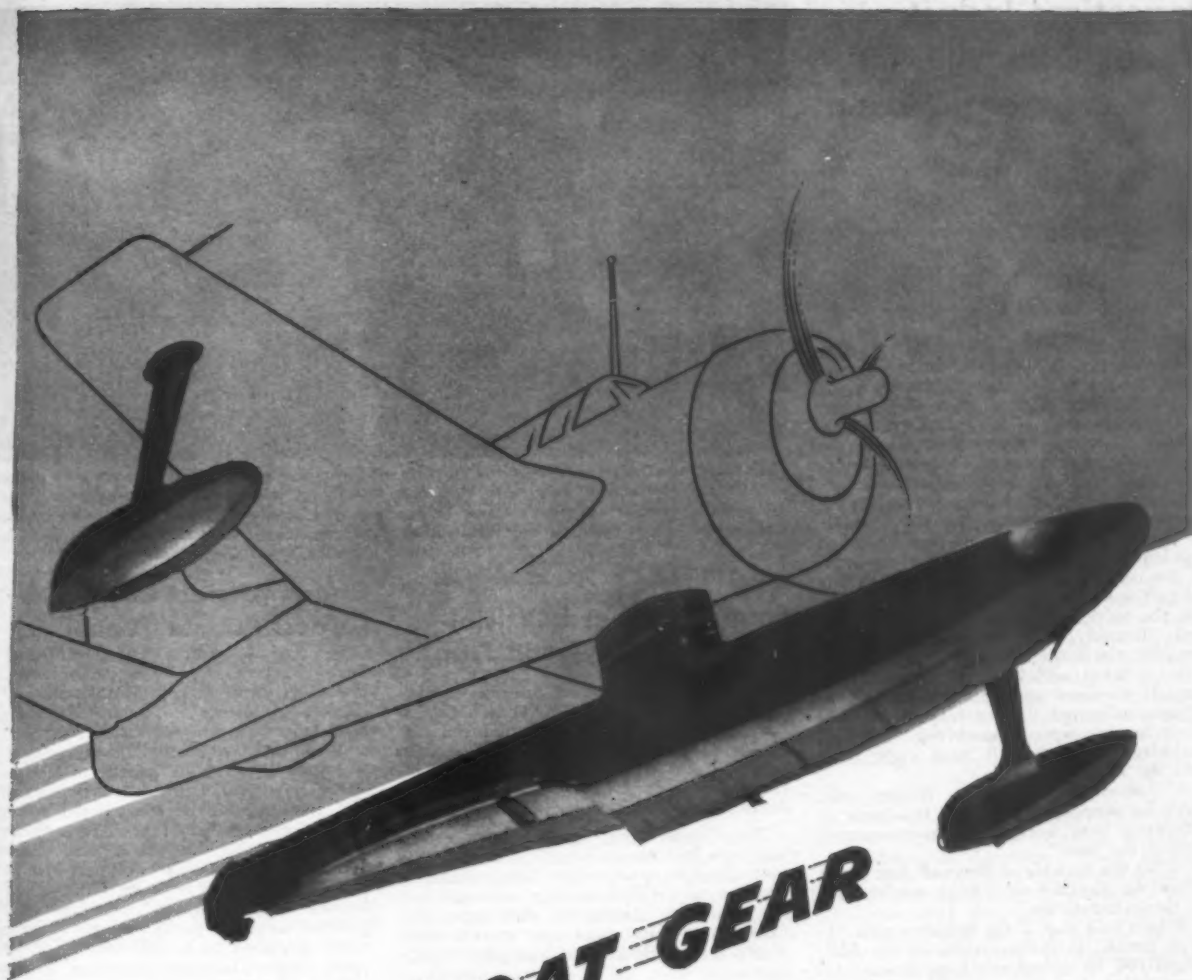
R. K. Brown, formerly manager of the contract and service department of the Wright Aeronautical Corp., Cincinnati plant, has been appointed manager of the Washington office of Curtiss-Wright Corp., succeeding Richard S. Huested, who has been named administrative assistant to William Kennedy, vice president and general manager of Wright Aeronautical.

Clay Crane, Santo Tomas survivor, is the newly appointed director of public relations and advertising for Airon Manufacturing Corp.

John N. Gladden will emphasize design and engineering as new president of Kinner Motors, Inc. E. S. Safford, formerly in charge of contract administration, has been appointed head of a newly established export sales department for Beech Aircraft Corp., while W. Homer Kelly, former assistant personnel director, has been named as public relations director.



Gladden Cregier Wildman



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THE LONG and illustrious war record of our naval and military float planes in the Pacific is hailed nowhere with greater satisfaction than at the Edo plant at College Point where so much of the float gear for our warplanes has been produced. Today the Edo organization looks forward to the resumption of civilian flying when its matchless experience of twenty years in building seaplane floats may once more be placed at the disposal of peacetime aviation.



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Peacetime Industry Needs Only 200,000 Workers, Says Wilson

Aircraft manufacturing in peacetime will be a relatively small industry compared with its wartime vastness, requiring probably no more than 200,000 workers instead of the 1,000,000-odd employed during the peak of war production, E. E. Wilson, president of the Aircraft Industries Association and vice-chairman of the United Aircraft Corp. said in a recent radio address.

Aircraft production likewise will decrease sharply, Wilson said, estimating the peacetime output at about 9,000 per year, including fighting and pleasure planes. Moreover, he said, of the estimated 200,000 workers needed, some 50,000 will be highly skilled engineers—"a sort of nucleus" for possible future expansion.

Regarding the placement of returning veterans in the industry, Mr. Wilson said:

"There you have one of the unsolved problems of the moment. If every man in the service who ever worked in the aircraft industry comes back for his old job, the total will be well over the 200,000 limit. Frankly, we're waiting, like everyone, for clarification from Washington."

As to what will happen to the 800,000 aircraft workers who will lose their jobs, Wilson estimated that at least a third of those leaving were housewives, "the vast majority of whom will head right back into the kitchens."

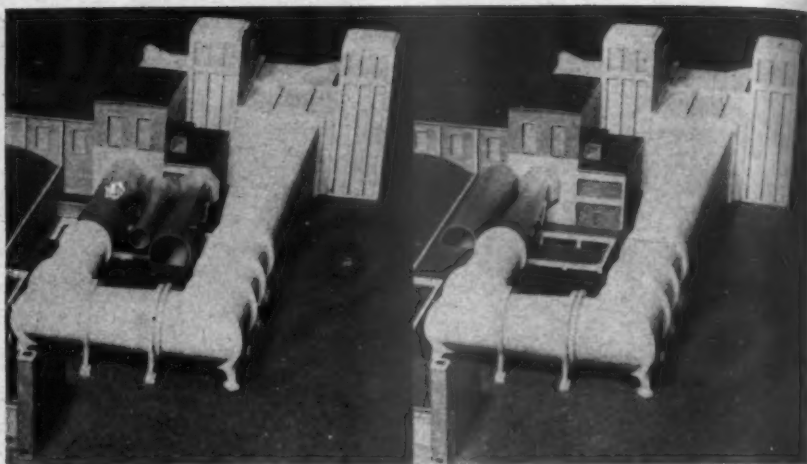
A half-million workers, Wilson said, "will be snapped up by the hundreds of industries that were called non-essential during the war."

"With the backlog of demand that exists today, we should have a huge employment in these industries."

Wilson said that if the industry gets "an even break" in renegotiation of the \$19,000,000,000 in government contracts still outstanding, it would pull through "fine." If not, "some aircraft companies will be put out of business."

"The aircraft industry does not want to be subsidized by government, but we must have support if we are to maintain what we have got now—the finest airpower in the world."

"What we want is a definite public policy on production, development and research. That's the only way we're going to be able to offer jobs to people."



Two views of a model of the United Aircraft wind tunnel show, left, arrangement with 18-foot test throat in use and, right, with eight-foot test throat in place. The movable steel portion of the tunnel has been moved to the left, the small test throat has been wheeled inside the 18-foot throat within the building, and the tunnel circuit has been completed by the diffuser section.

Former Lockheed Official Buys Into Hollywood Firm

Thomas H. Corpe has purchased controlling interest of Otto K. Olesen Co., of Hollywood, Calif., it was announced last fortnight. Corpe formerly was assistant general sales manager of Lockheed Aircraft Corp., and general manager of Jordanoff Aviation Corp., New York.

The Olesen Company has been established in Hollywood for 27 years and has specialized in spectacular illumination. In addition to its illuminating business, it is the Southern California distributor for RCA Sound Equipment, and manufacturer of the line of Beattie photographic equipment.

Navy to Clear Claims

H. Struve Hensel, Assistant Secretary of the Navy, has announced that the Navy will attempt to have all claims filed by contractors on or before Oct. 15 reviewed by inspectors of material and in the hands of contracting officers by Nov. 15.

United Aircraft Completes Largest Private Tunnel

The completion of a new wind tunnel at East Hartford, Conn. is announced by United Aircraft Corp. The laboratory is capable of testing full-scale power plant installations at air speeds of 200 mph as well as reduced scale models of aircraft and propellers at air speeds of 600 mph.

The new tunnel, the largest closed circuit type ever to be constructed of reinforced concrete and the largest private wind tunnel in the world, can test engines of up to 4000 hp equipped with propellers as large as 17 ft. in diameter. The tunnel is the first to specialize in the problem of power plant testing. It is especially designed to permit testing of complete engine installations prior to completion of experimental or prototype airplanes thus eliminating, according to United Aircraft, much of the normal delay, hazard and flight test time.



Iden

Tibbits

Form New Company

"Ken" Tibbits, at one time with Taylorcraft, and "Duke" Iden have formed Consolidair, Inc., in Alliance, Ohio, to manufacture accessories and equipment for lightplanes and servicing equipment for airports. Initial products being offered by the new company include an hydraulic tail wheel said to eliminate chattering, a gascolator bulb to allow draining outside the cowl, the torpedo style wheel pants, chocks, tie-down stakes and rings, and service stands. Tibbits is president of Consolidair, and Iden secretary and treasurer.

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Factory in India Overhauls 600 Aircraft in One Year

**Hindustan Aircraft Ltd.
Nation's Only Aero Plant**

By ERIC BRAMLEY

BANGALORE, INDIA—Indians, thousands of them, working on American airplanes, and doing a good job of it, is the sight that impresses one during a visit to Hindustan Aircraft Ltd., India's only aircraft factory.

The factory, which was built before the war, is now operated by the Air Service Command and is known as the Southern India Air Depot. It does not build airplanes, but is utilized solely for major overhaul of Army aircraft.

The personnel of the factory is a mixture of Indian, Army and American civilian. The combination seems to have worked out successfully—so successfully that in 1944 over 600 airplanes received major overhauls, as did 3,000 engines, half a million instruments, half a million accessories and several million spark plugs.

The original purpose of the factory was to build airplanes—American airplanes, to be built under license. Responsible for the establishment of the enterprise was William Pawley, the head of Intercontinent Corp., who had been in China forming the Central Aircraft Manufacturing Corp. Returning to China from the U. S. via Clipper, Pawley met Walchand Hirachand, prominent Indian financier, who became interested in Pawley's Chinese enterprise. Pawley was persuaded to visit Bombay for talks which eventually led to the formation of Hindustan Aircraft.

Construction Began in 1941

At the outset, the factory was owned one-third by the Indian government, one-third by the progressive state of Mysore, in which it is located, and one-third by interests represented by Hirachand. Pawley was chairman of the board of directors and managing agent. Contracts were drawn up in 1940 and construction of the plant started in February, 1941. Contrary to previous stories which have said that a "horde" of American technicians supervised the construction, the first work was done by only four of Pawley's employees from China.

The factory never had a real chance to get into production. A few Hawk 75s, Harlow trainers and Vultee medium bombers were turned out, but then came Pearl Harbor, and the U. S. Army wanted the plant for overhaul of its planes. Pawley retired from the company, the Indian government bought out the Hirachand interests, and the Army took over management.

Chairman of the board of directors is now the Air Service Command's commanding officer at the base, Col. Melville C. Robinson. There is one director from the Indian government and one from the state of Mysore.

In a country which is certainly not among the world's most highly industrialized nations, this aircraft factory is an impressive sight. Except for its color, which is a dirty red, it might be a U. S. plant. There is 750,000 sq. ft. of roofed-

in area, and 99% of the heavy machinery is American-made.

Over 10,000 Indians are employed in the factory, compared with 150 American civilians in supervisory positions and comparatively few Army personnel. The Indians work on everything—planes, engines, accessories, delicate instruments. In building after building there is almost no white personnel.

Because of the increasing importance of its mission, the Air Transport Command has first priority in the factory, and almost 70% of the work done is on its airplanes—C-47s and C-87s. Some Combat Cargo planes plus B-25 staff ships and a few B-24s are also handled.

As is the case at the Central India Air Depot at Agra, where C-46s are overhauled, the Southern India Air Depot uses production line maintenance. The C-47s and C-87s come in for major overhaul after an average of 1,800 hours of flying. They immediately start down the line, are completely disassembled, inspected, repaired and reassembled. There are 10 stages in the C-47 line, and a new airplane is turned out in less than two weeks. The C-87 line also has 10 stages, but because it is a more complicated four-engine airplane, working time is approximately five weeks.

ATC Planes Handled

Some of the airplanes that come to Hindustan Aircraft are in such battered condition that they are not worth overhauling. So a general policy, dictated by ASC, has been established—if an airplane that is one year old would take more than 45 days to fix, it is scrapped; a two-year-old plane must not take more than 30 days, and a three-year-old plane 19 days.

When ATC planes are completed, they are tested and then turned over to ATC, which tests them further before acceptance. ATC handles and ferries all aircraft in and out of Bangalore, but runs acceptance tests only on its own ships. ATC's commanding officer at the base is 25-year-old Maj. A. W. Patterson, of Dallas, Tex.

The shops at Hindustan Aircraft are probably the most complete in India. They include a machine shop, sheet metal, heat treat, propeller, spark plugs, radio, strut and fuel tanks, engineering, chemical and others. And because it is separated from sources of supply, the factory is forced to make many articles—batteries, rivets, floors for airplanes, belly tanks, etc.

The depot does 40% of the accessory overhaul in the India-Burma theater and all the instrument work. Instruments and accessories that are to be overhauled are shipped to Bangalore via ATC.

Because of the comparatively low living standards, wages received by the Indian employees are not high. An average mechanic will receive one rupee eight annas a day (about 46c) and a skilled machine operator will get five to seven rupees daily (\$1.50 to \$2.10). Some supervisory personnel receive more, but the highest salary paid to an Indian employee is probably not more than \$150



Autojet Engine—A 5-oz. wind tunnel

model of a new ram type jet engine for high speed aircraft and flying bombs is inspected by A. J. Klose, engineer, G. M. Giannini, president, and W. B. Goodman, engineer of G. M. Giannini & Co., Pasadena, Calif., who developed the new power plant in conjunction with the Air Technical Service Command. It is said to be patterned after the German buzz-bomb engine, but to produce more thrust for less weight and smaller size. The model weighs 5 oz., produces 2 lbs. thrust and fires approximately 250 times per second. No full scale model has yet been built. (Below) This drawing of the autojet engine suggests that it comes much closer to the athodyd principle than to that of the German buzz-bomb engine which used shutters to regulate the building up of compression.

a month.

Most of the Americans who occupy supervisory positions formerly worked in U. S. aircraft factories. Some of them were with Pawley in China and have not visited the U. S. for eight years. These civilians have contracts with the Indian government and are paid by the government. Their present 18-month contract expires in March, 1946.

Among the Americans working at the factory are A. Anderson, factory superintendent, formerly with Curtiss-Wright; R. F. Stephenson, superintendent of aircraft overhaul, formerly with Douglas; M. Shields, head of the propeller department, formerly with Hamilton Standard; Henry Hoteko, special assistant to the chief of maintenance, formerly with Bendix Radio; A. Zampolino, superintendent of accessories overhaul, formerly with Pioneer Instrument Division of Bendix; Fred Godfrey, chief of production control, formerly with Vultee; N. Yankovich, assistant chief of accessories overhaul, formerly with Firestone, and William Bailey, personnel director, formerly with the old Keystone Aircraft Corp., of Bristol, Pa.

No one quite seems to know what Hindustan Aircraft will do after the war. The Indian government is understood to have said that there will be a factory at Bangalore, but there has been no indication that it will produce airplanes, automobiles, refrigerators or something else. However, in a recent interview with this correspondent at New Delhi, Sir Frederick Tymms, India's Director of Civil Aviation, hinted strongly that Hindustan Aircraft will make airplanes after the war—not on a large scale but nevertheless enough to keep the plant operating. They will probably be lightplanes. Transport production, if it comes, will take many years.

Convair-Louisville Closed

Consolidated Vultee's Louisville division, a Liberator B-24 modification center, was closed after three years of operation on September 7. All modification at the plant stopped with the announcement of Japan's acceptance of allied peace terms. As soon as the airplanes which were in process of being modified are put in flying condition, the aircraft will be "pickled" and stored for army disposition, Jones said.

Goodyear's Wartime Report

Goodyear Aircraft Corp. has produced nearly \$700,000,000 worth of airships, airplanes, airframes and their component parts during the wartime period. From October, 1940, to war's end, Goodyear's Akron plant turned out more than 4,000 complete PGI Corsairs, over 150 complete K and M type airships, and thousands of sections and parts for more than 20 types of airplanes.

Ryan Closes L. A. Office

Closing of its Los Angeles office is announced by Ryan Aeronautical Co. as a result of Navy cut-backs. Employees involved are mainly clerical.

Hope to Utilize Douglas-Long Beach

United Auto Workers, CIO, have started a campaign to utilize Douglas Aircraft's \$25,000,000 Government-owned plant in Long Beach. Union leaders went to the Long Beach City Council for help declaring that buildings already out of use contained the most modern facilities for fabricating almost any conceivable commodity. Douglas laid off 12,500 workers at Long Beach following the Army's cancellation of its A-26 contract. The company is still working on the C-74, Army transport, at Long Beach but this requires only a fraction of the plant.

Workers Still Needed

Three Los Angeles aircraft companies are seeking qualified workers, despite the personnel reductions ordered in the large airframe plants. These three companies, now engaged in reconversion programs for the airlines, are the Grand Central Airport, Timm Aircraft and Aero Services.

Convair Halts RY-3 Production

Consolidated Vultee's San Diego division has stopped production of the RY-3 Navy transport. It is estimated that between 1,200 and 1,300 production workers will be affected by the move, in addition to a number of indirect workers. As a result, total employment at San Diego is expected to be between 7,000 and 8,000.

Air Associates Distributor

Air Associates, Inc., of Teterboro, N. J., has been appointed national distributor of aircraft valves and fittings manufactured by the Parker Appliance Co., Cleveland, O. To expedite distribution, Air Associates will stock replacement parts for existing aircraft fuel and hydraulic systems in warehouses at Teterboro, Atlanta, Chicago, Dallas and Los Angeles.

Headed for Scrap Pile

Approximately 26,000 AAF aircraft in Europe on V-E Day and in the Pacific on V-J Day are headed for the scrap pile, according to an AAF spokesman. Representing 75-80% of all AAF craft overseas, the equipment will be written off because of age, battle and operation attrition. The estimate may be revised by the AAF and changed by the SPB who will receive the aircraft in the field from the AAF for disposition. The AAF is said to be scheduling for postwar occupation and other chores 191,000 men and 3675 aircraft in the Pacific, and 126,000 men and 2094 aircraft in Europe.

'Redeployment' of Engines

A "redeployment center" for aircraft engines has been established at South Bend, Ind., by the ATSC for storing engines returned from overseas until they are recalled for military use or released to civilian buyers. Here the engines, ranging from those used in bombers to those which powered training craft, will be processed chemically for long-range anti-corrosion storage. Until release to the DPC, engines will be provided storage maintenance by the Fairfield ATSC, Patterson Field, O., of which the South Bend depot is a subordinate station.

Civilian Buys P-38 Lightning

Arthur D. Knapp, president of Mechanical Products, Inc. of Jackson, Mich., is believed to be the first civilian purchaser of a P-38 Lightning, according to Lockheed Aircraft Corp. Knapp, who is 53 and has been flying for 22 years, took delivery of the fast fighter from the government at Bush Field, Ga. and flew it to Stout Field, Indianapolis, in an hour and 46 minutes. He said he planned to use the plane for research and development work on high pressure hydraulic pumps, electrical circuit breakers and voltage regulators and relays.

Data on Tire Life Expectancy

Data on the life expectancy of aircraft tires under given conditions are now being prepared by tire manufacturers for discussion with landing gear specialists of the aircraft manufacturers as a result of a recent joint conference of the Ground Loads Subcommittee, Airworthiness Requirements Committee, Aircraft Industries Association of America, and the Airplane Tire Standards Committee, of the Tire and Rim Association. It is estimated that about 90 days will be required to assemble the data.

Thousands of Tires for Sale

Thousands of airplane tires, representing about 50% of all airplane tire sizes manufactured, are being offered for sale by the Commerce Department's Office of Surplus Property for use on tractors, automobiles, trucks and trailers. All the tires require a one-section repair which makes them ineligible to pass CAA inspection for use on aircraft. The tires are on sale at the Office of Surplus Property, Mogadore, Ohio, and Ontario, California.

A-20 Tooling Sold for Scrap

Obsolete A-20 tooling, originally valued at \$10,000,000, was sold for scrap to the Eastern Iron and Metal Co. at \$8.05 a ton. The Western District Air Technical Service Command sent invitations to 300 dealers to bid on the tooling which covered seven acres at Culver City, Calif. Fifty dealers replied and of that number 22 submitted checks with bids.

Use Surpluses for Research, President of AIAA Urges

Official sponsorship of a program for utilizing surplus military aircraft in aviation research, developed by the Aircraft Industries Association is sought in recent letters to the Secretary of War and the Secretary of the Navy from Eugene E. Wilson, AIAA president. The project was turned over last April by the Surplus Property Board to the NACA Executive Committee which has neglected thus far to act on the matter. Approval of the surplus aircraft research program has been given by the ATSC and Bureau of Aeronautics, the CAA, CAB National Research Council, Mayo Aero Medical Unit, airline operators and aircraft manufacturers.

Preliminary studies have already been made by all interested parties as to the type of tests desired and the organizational means for conducting the program. The Army and Navy are asked to assist the project by verifying the interests of the Army and Navy aeronautical divisions and then offering a sponsorship medium.

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Photo of Boeing B-29
Superfortress courtesy
Boeing Aircraft Co.

30-40-50 degrees and more below zero! That's how cold it is up where the B-29's fly. And our boys who fly them must be given every protection that science can devise to guard men against those paralyzing temperatures, to keep them as warm and comfortable as possible on their hazardous missions.

One of the most important means of getting such protection is the use of Fiberglas* Aircraft Insulation in the compartments and cabins. It helps keep heat in—cold out.

Fiberglas insulation, for aircraft of all types, is made of fine fibers of glass, bonded together into a flexible blanket form. It is so light that 20 square feet, one inch thick, weigh less than a pound! And this feature is carried through in service because the fibers, being glass, do not gain weight by moisture absorption, even under

conditions of extreme humidity. Fiberglas is noncombustible, too.

This combination of properties, found only in Fiberglas, has given designers the weightsaving material they needed in aircraft, where every ounce is of vital importance.

Furthermore, these soft blankets of Fiberglas provide highly efficient *acoustical* insulation. The nerve-shattering high-pitched vibration noises and the monotonous drumming roar from the motors are dampened and absorbed.

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\$10,000,000 Financing Program Planned by PCA

15-Year Debentures To be Offered Public

PENNSYLVANIA CENTRAL AIRLINES will undertake a \$10,000,000 financing program to be obtained through 15-year convertible income debentures, according to Raymond G. Lochiel, vice president and treasurer.

The debentures will be offered to the public through a group of investment houses headed by White, Weld and Co., and Carl M. Loeb, Rhodes and Co.

The proceeds are to be used by PCA to meet the cost of a fleet of four-engined planes now on order and to acquire "other

operating properties."

All American's Annual

All American Aviation, Inc., with current assets of approximately \$1,000,000 is in an "excellent liquid position" to meet the postwar period, Halsey R. Bazley, president, declared in the company's annual report to stockholders. The company's total business in the fiscal year ending July 30, Bazley reported, amounted to \$3,800,000 as compared with \$3,475,000 in the previous year but profits dropped from \$238,577.50 to \$191,771.13. The decline, he explained, was due to an operating loss of \$73,931.98 incurred by the Air Transport Division and a write-

off of \$62,967.71 of deferred charges in connection with route surveys and new route applications.

Braniff Quarterly Report

During the June quarter of this year, Braniff Airways, Inc., flew 628,000 more revenue miles and carried 28,300 more revenue passengers than in the corresponding period of 1944, bringing total revenues up to \$2,006,406 in comparison with the \$1,552,784 reported for the second quarter of last year. Expenses for the second half of 1945 were stated at \$1,714,083, leaving net income before taxes of \$292,323, and net profit (after estimated income taxes) at \$129,866. These figures compare with expenses of \$903,895, net income before taxes of \$648,880 and net profit after estimated income taxes of \$392,285 stated for the June quarter of 1944. However, in the second quarter of this year, non-recurring expenses of approximately \$106,000 were charged off, whereas an extraordinary income of about \$169,000 was included in the June, 1944 income account, representing profit on the sale of equipment to the Government.

Douglas, Lockheed in Good Shape

In Los Angeles financial circles, it is pointed out that Douglas and Lockheed, two of the West Coast's leading aircraft manufacturers, have emerged from the war cut-backs with more business on their books than the entire gross business of the industry in 1939. In that year the total was \$279,000,000. Douglas has \$175,000,000 in military contracts plus \$130,000,000 in commercial orders. Lockheed has a military backlog of \$185,000,000 and commercial orders of \$150,000,000.

Lend-Lease Aircraft Spending Totals More Than Five Billion

President Truman's 20th report to Congress on Lend-Lease operations for the period ended June 30, 1945 reveals expenditures of \$5,018,793,000 for aircraft and parts which were exported to seven of this country's allies. The same report reveals that reverse Lend-Lease on Air Force supplies and equipment amounted to \$45,273,000 for the period ended April 1, 1945. Total Lend-Lease aid for all purposes amounted to \$42,809,382,000.

A table showing expenditures by countries follows:

	Exports Aircraft & Parts	Reverse Lend-Lease (Aircraft Supplies & Equipment)
United Kingdom	\$2,402,900,000	\$373,093,000
U. S. S. R.	1,583,827,000
China	110,496,000
India	507,874,000	8,630,000
Australia	364,425,000	62,872,000
New Zealand	48,900,000	678,000
France	369,000
	\$5,018,793,000	445,273,000

NAL Stock Sold in 10 Minutes

Lehman Brothers made a special offering recently on the New York Stock Exchange of a block of 20,700 shares of common stock of National Airlines, Inc., at 23%. The offering was completed in ten minutes. The commission to dealers was \$1 a share. The largest trade was 1,700 shares and the smallest ten shares.

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Over - the - Counter Securities

(Courtesy Merrill Lynch, Pierce, Fenner & Beane)

	August 31		September 1	
	Bid	Ask	Bid	Ask
AIRLINES				
All American Aviation	9½	9½	9½	9½
American Airlines Pfd.	Called 1/15 @ 106			
American Export Airlines	60	64	59	62
Braniff	22¾ sale		22¾ sale	
Chicago and Southern common	20¾	21¼	24½	25½
Chicago and Southern warrants	12¾	13½	16¼	17½
Continental Airlines	15½	16½	15½	16½
Delta Air	39½	40½	39½	40½
Inland Airways	6½	7½	6½	7½
Mid Continent	14¾	14¾	15¼	16¼
National Airlines	24 sale		23½ sale	
Northeast Airlines	15¾ sale		15¾ sale	
MANUFACTURERS				
Aerona	5	5½	5	5½
Air Associates	11¾	11¾	12 sale	
Aircraft & Diesel	3¾	2¼	1¾	2½
Aireon Mfg.	11½ sale		10½ sale	
Airplane & Marine	7¼	7¾	8	8½
Central Airports	1½	1¾	1¼	1½
Columbia Aircraft	¾	1	¾	1
Continental Aviation	2½	2½	2½	2½
Delaware Aircraft Pfd.				
General Aviation Equipment	1½	2¾	2¼	2½
Globe Aircraft	3¼	3¾	3¼	3¾
Harlow Aircraft	45c	55c	50c	60c
Harvill Corp. common	2	2¼	2	2½
Interstate Aircraft & Engine	10½	11½	10½	11
Jacobs Aircraft	10¾	11½	5½	6
Kellett Aircraft	2½	2¾	1½	2
Kinner Motors	1.30	1.40	1.55	1.65
Liberty Aircraft	12¾	13½	13¾	14½
Luscombe	2¼	2½	2	2½
Menasco Mfg.	2¾	3	2¾	3
Northrop Aircraft common	7¾ sale		8 sale	
*Pacific Airmotive Corp.	3¾	4½	3¾	4½
Piper Aircraft common	5¾ sale		5¾ sale	
Piper Aircraft Pfd.	55 bid		55 bid	
Rohr Aircraft	11½	12¼	11½	12½
Standard Aircraft Products	60c	70c	60c	70c
Taylorcraft common	3¼	3¾	3¼	3¾
Taylorcraft Pfd.	To be called @ 11			
Timm	1.35	1.45	1.40	1.50
United Aircraft Products Pfd.	19	20	19	20½

* Formerly Airplane Mfg. & Supply Corp.; name changed March 1945.

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